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SMT. VIDYAWATI COLLEGE OF EDUCATION

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NATIONAL CONFERENCE

on

Role of Science, Management & Art in the
Vision of Developed India 2047 (NCRSMA-26)

25th & 26th May 2026



Indian Council of
Social Science Research



Souvenir-Cum-Abstract Book

Sponsored By -

Indian Council of Social Science Research
(ICSSR)

Organized by - Smt. Vidyawati College of Education

Souvenir-Cum-Abstract Book

National Conference

On

**Role of Science, Management & Art in the
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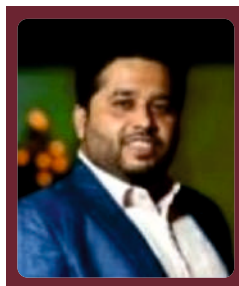
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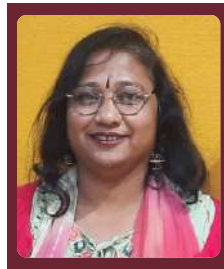
EMINENT SPEAKERS



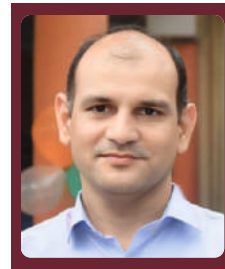
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Vice Principal
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ABOUT US

National Conference on "National Conference on Role of Science, Management & Art in the Vision of Developed India 2047" (NCRSMA-26)

It is a matter of immense pride and pleasure to welcome all the distinguished guests, delegates, academicians, researchers, and students to this prestigious ICSSR-sponsored National Conference, organized by **Smt. Vidyawati College of Education**, Jhansi, under the visionary aegis of the **Smt. Vidyawati Group of Institutions (SVGI)**.

This souvenir stands as a testament to our collective commitment to academic excellence, intellectual dialogue, and future-forward innovation.

Conference Theme: The Vision of Developed India 2047

The modern educational and developmental landscape is undergoing a massive paradigm shift. This year, our focus centers on the theme:

"National Conference on Role of Science, Management & Art in the Vision of Developed India 2047" (NCRSMA-26).

Scheduled from **25th to 26th May 2026** at the **Auditorium, SVGI Jhansi (U.P.)**, this conference serves as a vital collaborative platform. It brings together intellectual minds to deliberate on how the core pillars of Science, Management, and the Arts can be harmonized to drive innovation, economic strength, and holistic growth toward India's centennial milestone of independence.

Acknowledging Our Illustrious Leadership & Guests

An academic congregation of this scale is made possible only through the inspiration and guidance of visionary leaders, eminent scholars, and organizers:

- **Chief Patron:** Shri. Vidya Nidhi Mishra (Chairman)
- **Patrons:** Shri. Manas Mishra (Secretary) and Shri. Ravindra Chaturvedi (Treasurer)
- **Chief Guest:** Dr. Gauri Khanwalkar (Coordinator/HOD) Department of Chemistry, Bundelkhand University Kanpur Road, Jhansi (U.P.)
- **Guest of Honour:** Prof. (Dr.) Alok Verma (Dean of Science) Bundelkhand University Kanpur Road, Jhansi (U.P.)
- **Convener:** Dr. Rohit Verma (Associate Professor) Smt. Vidyawati College of Education, Gora Machhiya Kanpur Road, Jhansi (U.P.)

Eminent Speakers

We are deeply honored to host an international and national panel of distinguished experts who bring a wealth of knowledge to this conference:

- **Dr. A. K. Pandey** – Principal Scientific Advisor & Director, Research & Development Cell at HSNC University, Mumbai (Maharashtra)
- **Dr. Vijay Kumar Agarwal** – Vice Chancellor, RKDF University, Bhopal (M.P.)
- **Dr. Chitra Gupta** – Assistant Professor, Department of Chemistry, Institute of Basic Science, Bundelkhand University Kanpur Road, Jhansi (U.P.)
- **Prof. (Dr.) Virendra Singh Chaudhary** – Principal, Smt. Vidyawati College of Nursing, Jhansi (U.P.)
- **Dr. rer. nat. Aashish Soni** – Group Leader, Division of Radiation Biology, Clinic for Radiotherapy, University of Duisburg-Essen Medical School, Essen, Germany
- **Mr. Ankit Rajpoot** – Ph.D., Johannes Kepler University, Altenberger-Straße Linz, Austria
- **Dr. Geeta Chaudhary** – Vice Principal, Smt. Vidyawati College of Nursing, Jhansi (U.P.)

Organising Committee

Our heartfelt appreciation goes to the organizing team for their meticulous planning and dedication:

- **Co-Conveners:** Prof. (Dr.) Sudha Richhariya, Dr. Anil Kr. Dubey, and Mr. Shashwat Tiwari
- **Committee Members:** Dr. Anjana Singh Pal, Dr. Rakesh Raj, Mr. Rajkumar, Mr. Saurabh Sen, Mr. Manoj Yadav, Ms. Sakshi Sudele
- **Editor:** Mr. Anjneya Sharma

Words of Gratitude

We extend our sincere thanks to the **Indian Council of Social Science Research (ICSSR)** for their sponsorship and support. This souvenir compiles a rich repository of abstract insights, innovative ideas, and research papers selected for presentation. We are confident that the knowledge shared within these pages will inspire new academic pathways and contribute meaningfully to the nation's progress.

We wish all the participants a highly engaging, intellectually stimulating, and productive conference experience!

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Smt. Vidyawati Group of Institutions, Jhansi (U.P.) - Profile

Smt. Vidyawati Group of Institutions (SVGI), Jhansi, established in **2002**, stands as a beacon of academic excellence and professional empowerment in the historically rich Bundelkhand region. Founded under the visionary leadership of **Dr. D.N. Mishra** (Founder Chairman) and **Mr. Vidya Nidhi Mishra** (Chairman), the group has dedicated over two decades to bridging the gap between rural potential and global professional standards.

Spanning a state-of-the-art campus at **Goramachhiya, Kanpur Road, Jhansi (U.P.)**, SVGI houses multiple specialized colleges offering regular diploma, undergraduate, and postgraduate programs. The institutions are approved by major apex councils including the **AICTE, PCI, INC, and NCTE**, and are affiliated with leading state universities like **Dr. A.P.J. Abdul Kalam Technical University (AKTU), Lucknow**, the **Board of Technical Education (BTE), Lucknow**, and **Bundelkhand University (BU), Jhansi**.

A Legacy of Holistic Multidisciplinary Education

SVGI is recognized for transforming ambitious students into industry-ready leaders across several key streams:

- **Pharmaceutical Sciences:** Providing deep technical knowledge and cutting-edge research paradigms through M.Pharm, B.Pharm, and D.Pharm programs.
- **Nursing & Healthcare:** Shaping compassionate healthcare warriors through specialized B.Sc. Nursing, GNM, and ANM courses.
- **Teacher Education & Arts:** Preparing the next generation of educators and thinkers through B.Ed., B.A., and B.Com tracks.
- **Technical Skill Development:** Fostering vocational excellence through specialized ITI Electrician and Fitter diplomas.

With separate libraries for all the depts. housing over 40,000 resources, modern advanced laboratories, separate standard hostels, and an aggressive **Training and Placement Cell**, SVGI continues to foster deep partnerships with global pharmaceutical and corporate leaders.



Smt. Vidyawati College of Education, Jhansi (U.P.) - Profile

Smt. Vidyawati College of Education is a prominent, co-educational institution located in Gora Machhiya, Kanpur Road, Jhansi, Uttar Pradesh. It functions under the aegis of the well-reputed [Smt. Vidyawati Group of Institutions \(SVGI\)](#). The college is formally recognized by the National Council for Teacher Education (NCTE) and maintains statutory alignment with university and state guidelines. It is permanently affiliated with [Bundelkhand University Kanpur Road, Jhansi\(U.P.\)](#), a premier state university accredited with an '**A++**' **Grade** by the National Assessment and Accreditation Council (NAAC).

Operating as a self-financed institution, Smt. Vidyawati College of Education focuses on delivering robust undergraduate education designed to foster academic growth and career readiness. The institution features modern infrastructure, including dedicated practical subject laboratories, smart classrooms, and a resourceful central library. The college holds a strong local reputation for maintaining structured curriculum delivery, supportive student facilities, and an educational environment focused on holistic student development.

To accommodate diverse academic interests, the college hosts an expansive range of foundational and professional undergraduate programs. It offers a well-regarded Bachelor of Education (**B.Ed.**) program alongside highly structured courses in Science, Commerce, and Arts. The broad academic footprint and student intake distribution across its core programs include:

- **Bachelor of Science (B.Sc.):** Features a total capacity of **240 seats**, split evenly with **120 seats** dedicated to the **Mathematics** stream and **120 seats** to the **Biology** stream.
- **Bachelor of Arts (B.A.):** Serves as the largest program at the institution with an extensive intake of **420 seats**.
- **Bachelor of Commerce (B.Com.):** Offers targeted professional commerce training with an intake of **60 seats**.





MESSAGES



Message from the Desk of The Vice Chancellor Bundelkhand University

Honourable Prof. Mukesh Pandey

Vice-Chancellor
Bundelkhand University, Jhansi

प्रो. मुकेश पाण्डेय

कुलपति

Prof. Mukesh Pandey

Vice-Chancellor



बुन्देलखण्ड विश्वविद्यालय, झाँसी

BUNDELKHAND UNIVERSITY

JHANSI - 284 128 U.P. (INDIA)

State University of U.P.

NAAC A++ Accredited, PM-USHA (MERU), NIRF Ranked, ISO:9001-2015 Certified

शुभकामना संदेश

भारत वर्ष आज "विकसित भारत २०४७" के संकल्प के साथ अमृतकाल की ऐतिहासिक यात्रा पर अग्रसर है। इस राष्ट्रीय लक्ष्य की प्राप्ति में विज्ञान, प्रबंधन एवं कला जैसे विविध ज्ञान-विषयों की समन्वित भूमिका अत्यंत महत्वपूर्ण है। विज्ञान नवाचार, अनुसंधान एवं तकनीकी आत्मनिर्भरता का मार्ग प्रशस्त करता है प्रबंधन संसाधनों के प्रभावी उपयोग एवं सुशासन को सुदृढ़ बनाता है वही कला एवं संस्कृति भारतीय जीवन-मूल्यों, सृजनात्मकता तथा मानवीय संवेदनाओं को समृद्ध करती है।

मुझे यह जानकर अत्यंत प्रसन्नता है कि ICSSR प्रायोजित राष्ट्रीय सम्मेलन "The Role of Science, Management and Arts in the Vision of Viksit Bharat 2047" का आयोजन शिक्षाविदों, शोधार्थियों, नीति-निर्माताओं एवं युवा प्रतिभाओं को एक साझा मंच प्रदान कर रहा है। यह सम्मेलन बहुआयामी चिंतन, शोध एवं संवाद के माध्यम से राष्ट्र निर्माण के नवीन आयामों को स्थापित करने में महत्वपूर्ण भूमिका निभाएगा।

आज आवश्यकता इस बात की है कि उच्च शिक्षा संस्थान केवल ज्ञान के केंद्र न रहकर नवाचार, नैतिकता, उद्यमिता एवं सामाजिक उत्तरदायित्व के प्रेरणा-स्रोत बनें। राष्ट्रीय शिक्षा नीति २०२० के अनुरूप बहुविषयी शिक्षा एवं अनुसंधान की संस्कृति विकसित करके ही हम आत्मनिर्भर, समावेशी एवं ज्ञान-आधारित भारत के निर्माण में सार्थक योगदान दे सकते हैं।

मुझे पूर्ण विश्वास है कि यह सम्मेलन प्रतिभागियों को नए विचार, शोध-दृष्टि एवं राष्ट्रीय विकास के प्रति सकरात्मक प्रतिबद्धता प्रदान करेगा। सम्मेलन की सफलता हेतु मैं आयोजकों, प्रतिभागियों एवं समस्त सहयोगियों को हार्दिक शुभकामनाएँ देता हूँ तथा आशा करता हूँ कि यह आयोजन "विकसित भारत २०४७" के स्वप्न को साकार करने में मील का पत्थर सिद्ध होगा।

(प्रो. मुकेश पाण्डेय)
कुलपति

डा. रोहित वर्मा
समन्वयक
श्रीमती विद्यावती कॉलेज ऑफ एजुकेशन
झाँसी

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Message from the Desk of The Registrar Bundelkhand University

Honourable Gyanendra Kumar

Registrar
Bundelkhand University, Jhansi

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Gram : UNIVERSITY



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झाँसी (उ.प्र.) 284128

संदर्भ...BU/R.C./2026/5456

दिनांक 22/05/26

Message from the Registrar

It is a matter of great pleasure to know that Smt. Vidyawati College of Education, Jhansi is organizing the National Conference on "Role of Science, Management & Art in the Vision of Developed India 2047 (NCRSMA-26)" on 25th and 26th May 2026.

The theme of the conference is highly relevant and significant in the present era, where interdisciplinary approaches are essential for achieving the vision of a developed India by 2047. Science, Management, and Art together contribute towards innovation, creativity, leadership, and sustainable national growth.

I appreciate the efforts of the organizing committee for providing a valuable academic platform to academicians, researchers, scholars, and students for sharing their ideas, research findings, and experiences. Such conferences play an important role in promoting quality education, intellectual collaboration, and research culture in higher education institutions.

I extend my best wishes to the organizers and participants for the grand success of this conference and hope that the deliberations of the conference will lead to meaningful outcomes for society and the nation.

Registrar
Bundelkhand University



Dr. D.N. Mishra
Founder Chairman

MESSAGE FROM FOUNDER CHAIRMAN

Dear Dignitaries, Delegates, Guests, and Friends,

It gives me immense pleasure to welcome you all to this year's National Conference.

A national conference is not just a meeting of minds; it is a catalyst for transformation. It brings together the brightest intellects, industry pioneers, and passionate researchers onto a single, collaborative platform. Our goal has always been to foster an environment where knowledge is shared, ideas are challenged, and groundbreaking innovations are born.

We stand at a critical juncture of rapid technological evolution and shifting global paradigms. The themes chosen for this conference reflect our collective commitment to addressing real-world challenges with sustainable, forward-thinking solutions. I am confident that the deliberations, research papers, and discussions over the next few days will set new benchmarks and inspire actionable insights across our industry.

To our esteemed delegates, your expertise is the bedrock of this event. To our young researchers and students, you are the torchbearers of tomorrow's progress. I urge you all to participate actively, network extensively, and absorb the diverse perspectives offered here.

I extend my heartfelt gratitude to the organizing committee, sponsors, and volunteers whose tireless efforts have brought this grand vision to life.

I wish this National Conference grand success and hope it ignites a renewed spirit of excellence in all of you.



MESSAGE FROM CHAIRMAN

Shri V.N. Mishra
Chairman

It gives me immense pleasure to welcome the galaxy of intellectuals, researchers, and young scholars to the ICSSR-Sponsored National Conference (NCRSMA-26).

The theme, "**Role of Science, Management & Art in the Vision of Developed India 2047,**" is both timely and transformative. As India marches toward its centennial year of independence, creating a self-reliant and progressive nation requires a cross-disciplinary approach. Innovation in science, strategic management practices, and the humanistic values of art must unite to build a sustainable future.

At Smt. Vidyawati Group of Institutions (SVGI), we have always prioritized research, professional ethics, and academic excellence. I congratulate the organizing team for putting together this vital platform.

I extend my best wishes to all the distinguished guests, speakers, and delegates for a highly successful event.



MESSAGE FROM SECRETARY

Shri. Manas Mishra
Secretary

I am thrilled to extend my warm greetings to all participants of this prestigious National Conference.

Education is the most powerful tool for national transformation. By focusing on the intersections of Science, Management, and Art, this conference directly addresses the critical pillars needed to achieve the vision of a **Developed India by 2047**. SVGI remains steadfastly committed to fostering an environment where research flourishes and knowledge translates into societal progress.

My sincere thanks go to the Indian Council of Social Science Research (ICSSR) for their valuable sponsorship. I also applaud our dedicated faculty and student volunteers for their seamless execution.

May the discussions over these two days inspire new ideas, collaborations, and pathways for our nation's growth.



MESSAGE FROM PRINCIPAL

Prof. Sudha Richhariya

Principal

Smt. Vidyawati College of
Education, Jhansi

As the host institution, it is a matter of profound pride for Smt. Vidyawati College of Education to welcome you to NCRSMA-26.

Educators bear the unique responsibility of shaping the future builders of our nation. To prepare students for the year 2047, our pedagogy must evolve beyond traditional boundaries. This conference bridges scientific inquiry, strategic management, and creative arts, offering a comprehensive toolkit for holistic development.

This souvenir captures a rich mosaic of thought-provoking research abstracts and papers. I am confident these pages will serve as a valuable resource for future academic study and policy development.

I express my deepest gratitude to our management for their constant mentorship, and I wish all participants a rewarding experience.



MESSAGE FROM CONVENER

Dr. Rohit Verma

Associate Professor,
Smt. Vidyawati College
of Education

It is my distinct privilege to welcome our esteemed Chief Guest, Guest of Honour, Eminent Speakers, and delegates to this National Conference.

Designing a roadmap for **Developed India 2047** demands that we break down academic silos. NCRSMA-26 was conceived to bring experts from diverse domains onto a single platform to share empirical findings and innovative strategies. We are incredibly honoured to host stellar national and international speakers from institutions ranging from Mumbai to Germany and Austria.

I am deeply grateful to our Co-Conveners, the organizing committee, and our institutional leadership for their tireless work in making this vision a reality.

I hope this souvenir sparks deep curiosity and drives impactful academic discourse. Welcome to SVGI, Jhansi!

Message from the Desk of the Keynote Speaker

ICSSR Sponsored | Hybrid Mode | 25–26 May 2026

National Conference on “Role of Science, Management & Art in the Vision of Developed India 2047” (NCRSMA-26)

Smt. Vidyawati College of Education, Gora Machhiya, Kanpur Road, Jhansi (U.P.) – 284121

MESSAGE



Dr. Ashok K. Pandey

Keynote Speaker

Principal Scientific Advisor & Director, R&D Cell, HSNL University, Mumbai
Former Sr. Scientific Officer (Retd.), Radiochemistry Division, BARC
Former Research Professor (Retd.), Chemical Science, HBNI, DAE
Assessor, National Assessment and Accreditation Council (NAAC)

✉ ashok.pandey@kccollege.edu.in | ORCID: 0000-0002-5651-0195

Dear Friends, Scholars, and Fellow Educators,

It is a matter of great privilege and joy for me to contribute this message to the souvenir of the ICSSR-Sponsored National Conference NCRSMA-26, organised by Smt. Vidyawati College of Education, Jhansi. I warmly congratulate the entire institutional family of S.V.G.I. for hosting this timely and significant academic gathering.

India stands at a historic crossroads. The vision of Viksit Bharat 2047, a developed, self-reliant nation by the centenary of our Independence, is not merely a government initiative; it is a call to action for every scientist, manager, artist, educator, and research scholar of this great nation. Achieving this vision demands the convergence of three transformative pillars: the power of Science and Technology, the discipline of Management and Policy, and the humanising force of Art, Culture, and Social Sciences.

“Research and Development is the engine that must drive India’s journey toward Viksit Bharat 2047. India’s current R&D investment must rise from 0.7% to at least 2.4% of GDP – the responsibility rests equally with academia, industry, and civil society.”

Forums such as this National Conference are essential spaces where interdisciplinary dialogue transforms into collaborative solutions. I am particularly heartened by the commitment of Smt. Vidyawati College of Education to fostering a culture of inquiry, innovation, and excellence. The tireless effort of Dr. Rohit Verma, Convener, and the entire organising committee in bringing together faculty, research scholars, and academicians in hybrid mode reflects the very spirit of modern, inclusive education.



To every participant, whether a faculty member, postgraduate student, or research scholar, I encourage you to embrace curiosity as your compass. Define clear success metrics, build cross-functional teams, protect your intellectual property early, and never be afraid to fail, for every setback on the research path is a stepping stone toward discovery.

May this conference spark collaborations that endure beyond these two days, and may the ideas exchanged here contribute meaningfully to India's march toward becoming a Viksit Bharat by 2047. My sincere gratitude to ICSSR for sponsoring this conference, and to the host institution for their warm hospitality and visionary leadership.



With warm regards and best wishes,

Dr. Ashok K. Pandey

Principal Scientific Advisor & Director, R&D Cell
HSNC University, Mumbai

NCRSMA-26 | SVGI, Jhansi | 25-26 May 2026



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“Sustainable Growth through Research and Development: Pathways to Viksit Bharat 2047”

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In an era characterized by rapid technological advancement and transformative innovation, research and development (R&D) has emerged as a central driver of sustainable growth, economic competitiveness, and societal progress. The vision of Viksit Bharat 2047 necessitates a resilient and well-integrated R&D ecosystem that effectively connects academia, industry, and government to address complex national and global challenges. In this context, aligning R&D with the United Nations Sustainable Development Goals (SDGs) provides a comprehensive framework for addressing pressing issues such as clean water and sanitation, affordable and clean energy, climate action, sustainable cities, and responsible consumption and production.

This talk examines the strategic orientation of R&D toward sustainability by emphasizing the need to integrate global priorities with local and regional challenges. Research must be increasingly problem-driven, focusing on context-specific solutions that address societal needs such as water security, waste management, pollution control, public health, and sustainable infrastructure. The importance of transdisciplinary approaches and stakeholder engagement in designing impactful research programmes will be highlighted. The discussion will further address the role of structured R&D management, encompassing project planning, execution, monitoring, and technology translation, in enhancing the efficiency and impact of research outcomes. Effective governance and performance-based evaluation frameworks are essential to ensure that R&D investments lead to scalable, socially relevant, and environmentally sustainable solutions. A key focus will be on the evolving landscape of R&D funding mechanisms in India, including government grants, international collaborative programmes aligned with SDGs, venture capital, and corporate social responsibility (CSR)-driven investments. Strategic alignment of funding with national missions and grassroots needs is critical to fostering inclusive innovation. Additionally, global partnerships can facilitate knowledge exchange and accelerate the development of sustainable technologies.

This talk will highlight an integrated perspective on how mission-oriented, SDG-aligned R&D, supported by robust funding architectures and effective management practices, can drive sustainable growth. Such an approach is essential for addressing societal and local challenges while advancing India's trajectory toward Viksit Bharat 2047 as a globally competitive and environmentally responsible nation.



“Recent Advances in the Synthesis, Characterization and Biological Activity of o-phenylenediamine with Carboxylic acids or their Derivatives”

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Abstract:

Benzimidazole is an organic compound characterized by its aromaticity and heterocyclic structure. It is a bicyclic compound formed by the fusion of the rings of two distinct entities—benzene and imidazole—both of which possess aromatic character. The ring system (aromatic framework) of this compound incorporates two nitrogen atoms. Benzimidazole is a compound of immense significance in the field of medicinal chemistry, serving as a key precursor in the synthesis of various pharmaceutical drugs and their derivatives. It is also highly renowned for its diverse pharmacological activities, including anti-cancer, analgesic, anthelmintic (effective against parasitic worms), anti-ulcer, anti-viral, anti-parasitic, and anti-microbial properties. In addition to serving as effective catalysts in the manufacture of benzimidazole, nanoparticles also function as nano-carriers for drug delivery, enhancing bioavailability and targeted cancer therapy. Formulations based on nanoparticles enhance the pharmacokinetic profile, stability, and solubility of benzimidazoles in the treatment of tumours. This study explores the synthesis of benzimidazole and its derivatives—aimed at eliciting various biological activities—utilizing novel methods and techniques that resulted in high product yields; furthermore, their physicochemical properties are discussed herein. This article presents a concise overview of the significance of benzimidazole and its potential utility in the future discovery of various therapeutic agents—endeavors that could prove truly instrumental in enabling people to lead healthier and better lives.

Till 2047, Benzimidazole along with nanoparticles will have a lot of benefits in the field of medical and lifestyle of humans.

Keywords: *Benzimidazole, Carboxylic acids, derivatives, Synthesis, Characterization, Aromaticity, Anthelmintic, Anti-viral.*



“Integrating Science, Management, and Art in Nursing and Allied Health Sciences: A Transformative Framework for Achieving Developed India Vision 2047”

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Abstract:

Background: India’s Vision 2047 emphasizes transformation into a developed nation with a resilient healthcare system. Nursing and allied health sciences play a critical role in achieving this goal.

Objective: To examine the integrated role of science, management, and art in strengthening nursing and allied health systems and to propose a framework aligned with Vision 2047.

Methods: A narrative review and conceptual analysis were conducted using national health policies, WHO reports, and peer-reviewed literature related to nursing, healthcare management, and medical humanities.

Results: The study identifies three interdependent domains: (1) scientific advancement through evidence-based practice and digital health, (2) managerial efficiency via leadership, policy, and resource optimization, and (3) artistic caregiving emphasizing empathy and communication. Integration of these domains improves healthcare quality, accessibility, and patient satisfaction.

Conclusion: A tri-dimensional approach integrating science, management, and art is essential for strengthening India’s healthcare system. Nursing and allied health professionals are pivotal in achieving sustainable and equitable healthcare under Vision 2047.

Keywords: *Nursing, Allied Health Sciences, Vision 2047, Healthcare Management, Evidence-Based Practice, Compassionate Care.*



“The Nursing Triad for Viksit Bharat 2047: Integrating Clinical Science, Health Management, and the Art of Caring”

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Abstract:

Nursing is the backbone of the Indian healthcare delivery system. For India to reach "Developed" status by 2047, the nursing profession must transcend traditional bedside roles. This paper explores how the integration of **Advanced Nursing Science** (Evidence-Based Practice), **Health Management** (Resource Optimization), and the **Nursing Art** (Holistic Care) creates a framework for achieving Universal Health Coverage. By 2047, Indian nursing must lead through digital health integration, nurse-led clinics, and culturally competent care.

Key words: Viksit Bharat 2047, Sustainable Development, Innovation Management, Creative Economy, Science & Technology. Nursing, Research.



“GC-MS based Phytochemical Profiling of the Aerial Parts of *MussaendaRoxburghii*”

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Abstract:

Medicinal plants constitute pivotal sources of bioactive compounds with significant therapeutic potential. *Mussaendaroxburghii* Hook.f. (Rubiaceae), although traditionally employed in folk medicine, remains underexplored regarding its detailed phytochemical composition. This study aimed to evaluate the secondary metabolite profile and conduct GC-MS-based characterization of bioactive constituents present in petroleum ether extracts of the aerial parts of *M. roxburghii*. Dried aerial parts of *M. roxburghii* were subjected to sequential extraction using petroleum ether, chloroform, and hydroethanol (70:30, v/v), arranged according to increasing solvent polarity. Qualitative phytochemical screening was performed following standardized protocols. Gas chromatography–mass spectrometry (GC–MS) analysis was employed to characterize and identify the chemical constituents present in the petroleum ether extracts. Phytochemical screening revealed the presence of major secondary metabolites, including alkaloids, terpenoids, flavonoids, phenolics, coumarins, and quinones. GC–MS profiling identified a diverse array of compounds encompassing both low- and high-molecular-weight phytoconstituents. Notably, 1h-indene-1-hexadecyl-2,3-dihydro-, 1-hexadecanol, Stigmast-5-en-3-ol-(3. Beta.)-, were identified—compounds documented for their pharmacological activities, including antioxidant, antidiabetic, and anti-inflammatory effects. The present study demonstrates that *Mussaendaroxburghii* serves as a rich source of bioactive phytoconstituents, thereby substantiating its traditional medicinal applications and underscoring its potential for future pharmacological investigations and drug development research.

Keywords: GC–MS; Secondary metabolites; Phytoconstituents; Bioactive compounds.



“Synthesis and Characterization on Chalcogen-Ligated Schiff Base by Ruthenium Complexes for using as Catalyst in Suzuki- Miyaura Coupling Reaction”

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Abstract:

The Suzuki–Miyaura cross-coupling reaction stands as one of the most pivotal Carbon–Carbon bond-forming transformations in modern synthetic organic chemistry, widely employed in the synthesis of pharmaceuticals, natural products, and advanced functional materials. Among the diverse catalyst systems explored for this reaction, Ruthenium complexes bearing chalcogen-ligated Schiff base ligands have garnered considerable attention owing to their tuneable electronic properties, structural versatility, and enhanced catalytic efficiency. This article comprehensively examines the synthesis and characterization of Ruthenium complexes coordinated with chalcogen-containing (Sulfur, Selenium, and Tellurium) Schiff base ligands and their application as catalysts in Suzuki–Miyaura coupling reactions. The synthetic strategies employed for the preparation of these chalcogen-ligated Schiff bases and their corresponding Ruthenium complexes are discussed, highlighting the role of donor atoms and coordination modes in modulating catalytic performance. Key characterization techniques, including FT-IR, NMR, ESI-MS, and single-crystal X-ray diffraction, used to elucidate the structural and electronic features of these complexes are surveyed. The influence of ligand architecture, chalcogen identity, oxidation state of Ruthenium, and reaction parameters on catalytic activity, selectivity, and turnover numbers are critically analysed. Furthermore, mechanistic insights into the catalytic cycle and the role of the chalcogen donor in stabilizing reactive intermediates are addressed. This paper aims to provide a foundational reference for researchers pursuing the rational design of next-generation Ruthenium-based catalysts for sustainable cross-coupling methodologies.

Keywords: *Schiff base ligands, Chalcogen coordinating, Cross-coupling reaction, Ligand architecture.*



“Role of Science, Management & Art in the Vision of Developed India 2047”

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Abstract:

India's vision of becoming a developed nation by 2047, marking 100 years of independence, requires an integrated contribution from science, management, and art. Science acts as the foundation for technological advancement, innovation, healthcare, agriculture, and sustainable development. Management ensures efficient planning, leadership, policy implementation, entrepreneurship, and resource utilization. Art and culture strengthen national identity, creativity, emotional intelligence, and social harmony. This paper explores how these three pillars together can accelerate India's transformation into a globally competitive, inclusive, and sustainable economy. The study highlights the importance of education, digital transformation, interdisciplinary collaboration, and cultural preservation in achieving the goals of Developed India 2047.

Keywords: Developed India 2047, Science, Management, Art, Innovation, Sustainability, Education, Digital India, Entrepreneurship.



“Alpha-terpinyl acetate: Novel Pluronic-127 Nano micelles for anti-fungal drug delivery”

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Abstract:

Plants that have an extensive history of being utilized in traditional medicine make a logical choice for scientific research. Whether the traditional applications are backed by real biological effects or are solely based on folklore is a fascinating issue to consider. Skin infections caused by fungi can occasionally worsen when they penetrate the third layer of skin. It has been demonstrated that a few plant extracts and some essential oils have strong antifungal effects. The present study successfully investigated for the initial the therapeutic potential of alpha-terpinyl acetate loaded micelles nano particles, resulting in the percent permeation cumulative amount alpha-terpinyl acetate permeated via dialysis membrane and porcine skin from micellar gel was 86.5 % higher than miconazole nitrate and also anti fungal activity was 50.1 % higher than miconazole nitrate.

Amphiphilic copolymer molecules often self-assemble into block copolymer micelles in an aqueous environment. Hydrophilic blocks create the micelle corona (or shells), whereas hydrophobic blocks create the micelle cores (or polyion complexes). Due to the solubilization of lipophilic medicines in the hydrophobic micelle cores, drug concentration in an aqueous environment is significantly increased. This gives bioactive molecules fresh life after being abandoned due to their poor water solubility.

Keywords: *α-Terpinyl acetate (A-TA), Pluronic F-127, Miconazole nitrate, Critical Micellar Concentration (CMC)*



“Analytical Study of Aquatic Ecology and Parasitic Load of Edible Fishes in Barua Sagar Lake of Jhansi District (U.P.)”

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Abstract:

Fishery resources play a fundamental role in strengthening national food security and bolstering the rural economy. Barua Sagar lake, situated in Barua Sagar town of Jhansi district, serves as a vital hub for regional nutrition and livelihoods.

This research focuses on the profound interconnections between aquatic ecology and edible fish species. In the current global scenario, climate change and increasing thermal stress have caused an imbalance in the physico-chemical properties of the aquatic environment. Consequently, the infection of helminth parasites in major edible fishes has emerged as a serious concern. During the study, it was found that seasonal changes, water temperature, habitat quality, and the sex of the fish are the primary determinants of parasitic load.

The main conclusion of the research is that an increasing parasitic load severely affects the general health of the fish, resulting in a significant recorded decline in their physical body weight. Statistical analysis clarifies that as the parasitic load increases, the muscle quality and total weight of the fish begin to decrease, thereby diminishing their economic utility in the market.

Under the methodology, samples of various species were collected from Barua Sagar lake and their weight and length were measured in the laboratory. Following dissection, permanent slides were prepared using staining techniques to examine the anatomical parts of the recovered parasites. The research demonstrates that due to increasing biological pollution and thermal instability in the water, there is an increase in the prevalence and intensity of parasitic infections in fishes. These findings prove that these parasites not only affect fish health but also act as 'bioindicators' of aquatic pollution. This study presents an important scientific basis for the conservation of fish resources and future ecological management policies of the Jhansi region.

Keywords: *Aquatic Ecology, Barua Sagar Lake, Edible Fishes, Parasitic Load, Fish Health, Body Weight, Thermal Stress, Bio-indicators.*



“Design and Development of Metal(II) Amino Acid-Based Polyphosphazene Derivatives for Sustainable Agriculture and Nutritional Security: A Step towards Vision 2047 India”

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Abstract:

India's vision of becoming a developed nation by 2047 is closely linked with advancements in sustainable agriculture and nutritional security. Over the past decade, inorganic polymers, particularly polyphosphazenes, have attracted significant attention in materials science due to their versatile structural and functional properties. Polyorganophosphazenes, represented by the general formula $[-N=P(R)_2-]_n$, exhibit tunable physicochemical characteristics depending on the nature of their side groups. In the present study, a novel series of inorganic polymeric Metal(II) amino acid-based polyphosphonitrilic derivatives has been successfully synthesized using L-arginine and L-alanine as organic ligands, along with sodium, ethoxy, and phenoxy substituents. The Metal(II) centers include Zn(II), Cu(II), Mg(II), Ca(II), and Fe(II), which play a crucial role in enhancing functional properties.

The synthesized compounds are systematically characterized using FTIR and XRD techniques, and their physicochemical properties—including conductivity, pH, melting point, dipole moment, dielectric behavior, and structural features—were analyzed. The results demonstrate that these derivatives possess desirable stability and functional adaptability, making them promising candidates for applied research.

Unlike conventional micronutrient formulations, which typically incorporate a single active component, the developed polymeric system enables the integration of multiple functional moieties, including amino acids and essential metal ions, within a single framework. This multifunctional approach offers a significant advantage in addressing micronutrient deficiencies in agricultural systems.

Given the increasing challenge of micronutrient depletion in soils, these water-soluble and eco-friendly inorganic polymeric derivatives hold strong potential as advanced nutrient delivery systems for crops. Their application can enhance nutrient availability, improve crop yield and quality, and contribute to sustainable agricultural practices.

Pea & Groundnut, being a primary source of plant-based protein, play a crucial role in addressing malnutrition and enhancing soil fertility. However, their productivity and quality remain constrained due to various biotic and abiotic factors. This study presents a novel

chemical compound designed to enhance both the quality and yield of such crops. The compound functions by improving nutrient uptake, stimulating plant growth, and increasing resistance to environmental stress. Field-level observations indicate a significant improvement in crop productivity, along with enhanced grain quality parameters such as protein content and seed size.

The application of this compound offers a cost-effective and scalable solution for farmers, contributing to higher income and sustainable farming practices. Furthermore, its integration into agricultural systems can reduce dependency on imports and strengthen national food security.

Thus, such innovative interventions hold strong potential in accelerating agricultural transformation and supporting India's journey towards achieving the Vision 2047 of a developed and self-reliant nation.

Keywords: *Polyphosphazene, Inorganic polymers, Metal (II) complexes, Amino acids, Micronutrients, Sustainable agriculture, Nutrient delivery system, Pulse crops, Vision 2047.*



“Phytochemistry of Medicinal plants, the *Ethno* Botanical Knowledge”

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Abstract:

This paper attempts to study how specialized metabolites with medicinal properties are non-uniformly distributed in certain families of plants, and these plants act as natural Phytochemicals. Phytochemicals from medicinal plants are receiving ever greater attention in the scientific literature, in medicine, and in the world economy in general over-the-counter remedies and "ethical phytomedicines," which are standardized toxicologically and clinically defined crude drugs, are seen as a promising low-cost alternative in primary health care. The field also has benefited greatly in recent years from the interaction of the study of traditional ethnobotanical knowledge and the application of modern phytochemical analysis and biological activity studies to medicinal plants. The present study aims to document and evaluate the traditional knowledge of medicinal plants as well as compare the distribution of knowledge and examine where research efforts are concentrated in order to gain a glimpse of current needs and future possibilities for research in the region.

Key words: Phytochemistry, Indigenous, Medicinal plants, Ethnicity, Ethnobotanical.



“Sustainable Energy Storage and the Role of Chemistry in Building Viksit Bharat 2047”

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Abstract:

Viksit Bharat 2047 means that India aims to become a developed, prosperous, and self-reliant country by the time it completes 100 years of independence. This goal includes technological progress, caring for the environment, and improving the lives of all people. Chemistry plays a very important role in all of this, as it helps drive new inventions and development. It supports the creation of new materials, modern technologies, and better industrial processes, which strengthen the country's economy. Chemistry also makes a major contribution to protecting the environment. Through green chemistry, eco-friendly products are developed that reduce waste and pollution. In addition, chemistry supports the growth of renewable energy sources like solar and wind energy. It also helps in developing clean fuels and advanced batteries, which are important for meeting energy needs and protecting the environment. Today, energy demand is increasing rapidly, so the use of renewable energy is also growing. However, solar and wind energy are not always consistent, which can create problems in electricity supply. To solve this issue, it is important to store energy. Different methods are used for this, such as pumped hydro storage, compressed air energy storage, batteries, hydrogen storage, and fuel cells. These methods help manage energy supply and demand, reduce pollution, and ensure a stable electricity system.

In addition, chemistry helps in reducing pollution, purifying water, and managing waste properly. All these efforts are essential for maintaining a clean and healthy environment. In conclusion, chemistry is a strong foundation for achieving the vision of Viksit Bharat 2047. By promoting education, research, and innovation in this field, India can progress, overcome challenges, and build a better future for its people.

Keywords: *Viksit Bharat 2047, Green Chemistry, Renewable Energy, Energy Storage Systems, Solar Energy, Wind Energy, Batteries.*



“Hidrochemical Characteristic’s: A Study of pH, Conductivity, COD and BOD Major Ions in Water Sample of Jhansi (U.P.) India”

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Abstract:

The present study focuses on the hidrochemical characteristics of water samples collected from Jhansi, Uttar Pradesh. The objective of this research is to evaluate water quality by analyzing key physico-chemical parameters such as pH, Electrical Conductivity (EC), Chemical Oxygen Demand (COD), and Biological Oxygen Demand (BOD), along with the concentration of major ions.

The pH values indicate the acidic or alkaline nature of water and help in determining its suitability for drinking and agricultural purposes. Electrical conductivity reflects the presence of dissolved salts and overall ionic content in the water. COD is used to measure the amount of oxygen required to oxidize organic and inorganic matter chemically, whereas BOD represents the amount of Dissolved Oxygen needed by microorganisms to decompose organic substances biologically.

In addition to these parameters, major ions such as Calcium (Ca^{2+}), Magnesium (Mg^{2+}), Sodium (Na^+), Potassium (K^+), Bicarbonate (HCO_3^-), Chloride (Cl^-), and Sulfate (SO_4^{2-}) were analyzed to understand the chemical composition and sources of contamination. The results reveal variations in water quality, which may be influenced by natural geological processes as well as anthropogenic activities such as domestic waste disposal, agricultural runoff, and industrial effluents.

Overall, this study provides important insights into the hidrochemical status of water in Jhansi and highlights the need for regular monitoring and effective water management strategies to ensure safe and sustainable use.

Keyword: Chemical Oxygen Demand (COD), Biological Oxygen Demand (BOD) and major ions.



“Air Quality Monitoring Using Moss: A Chemical Biomonitoring Approach to Heavy-Metal Deposition in and around Jhansi (U.P)”

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Abstract:

Air pollution is a serious threat to the environment and human health. Surging air pollution incidents are causing public health issues. Organic micropollutants are emitted to the atmosphere in substantial amounts and in a complex mixture of different chemical species. It has been established that these pollutants can be transported over very long distances. The use of mosses as bioindicators is based on their relatively large surface area and the fact that minerals and organic pollutants enter the plants to a large extent through the air. According to a report published by the World Health Organisation (WHO), air pollution is directly causing deaths worldwide. Particulate Matter (PM) is considered a major air pollutant and originates from various sources, the most common being vehicle emissions, industrial processes, mining, and stagnant water bodies. Heavy metals are associated with increased PM levels and pose a significant threat to the environment and human health. Plant tissues and other organisms have a good ability to accumulate them, which, once ingested, are not easily excreted and make the environment toxic to live in and affect the ecosystem.

Keywords: Air Quality, Particulate Matter, Heavy Metal deposition, Moss, Bioindicator.



Three Lignans from *Bupleurum Salicifolium*

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Abstract:

Three lignans, 2 β -hydroxy-2-a-3',4'-dimethoxybenzyl-3a-3'',4''-methylenedioxybenzyl-y butyrolactone, 2 β -acetyl-2a-3',4'-dimethoxybenzyl-3a-3'',4''-methylenedioxy-y-butyrolactone and 2-3''-4''-dimethoxybenzyl-3-3''4''-methylenedioxybenzyl-2,3-dehydro-y-butyrolactone were isolated from the leaves of *Bupleurum salicifolium*. The triterpene betulin was also obtained.

The n-hexane fraction of the ethanol extract of the leaves of *B. salicifolium* was subjected to preparative column chromatography and six γ butyrolactones were isolated.

Keyword Index - *Bupleurum salicifolium*, Umbelliferae, lignans



“लोकतांत्रिक मूल्यों के विकास में प्राथमिक स्तर पर भाषा शिक्षा की भूमिका: एक समीक्षात्मक लेख”

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सारांश :

लोकतांत्रिक समाज के निर्माण में शिक्षा की महत्वपूर्ण भूमिका होती है। विशेष रूप से प्राथमिक स्तर की शिक्षा बालकों के व्यक्तित्व, व्यवहार एवं सामाजिक मूल्यों के विकास की आधारशिला मानी जाती है। भाषा शिक्षा बालकों को संवाद, अभिव्यक्ति, सहभागिता तथा सामाजिक संवेदनशीलता विकसित करने का अवसर प्रदान करती है। प्रस्तुत समीक्षात्मक लेख में विभिन्न शिक्षा विदों एवं शोध अध्ययनों के आधार पर यह स्पष्ट किया गया है कि प्राथमिक स्तर पर भाषा शिक्षा लोक तांत्रिक मूल्यों - जैसे समानता, स्वतंत्रता, सहिष्णुता, सहयोग एवं सामाजिक उत्तरदायित्व - के विकास में महत्वपूर्ण भूमिका निभाती है। लेख में भाषा शिक्षा की अवधारणा, लोकतांत्रिक मूल्यों की आवश्यकता तथा शिक्षक की भूमिका का विश्लेषणात्मक अध्ययन प्रस्तुत किया गया है।

मुख्यशब्द: लोकतांत्रिक मूल्य, प्राथमिक शिक्षा, भाषा शिक्षा, मूल्य शिक्षा, लोकतंत्र।



“Sustainable Carbon dots from Biowaste: Emerging Tools for Future Development”

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Abstract:

Sustainable nanotechnology has emerged as a promising scientific approach for addressing environmental, healthcare, and industrial challenges in the vision of developed India. Among various nanomaterials, Carbon Dots (CDs) have gained considerable attention due to their exceptional optical properties, biocompatibility, low toxicity, chemical stability, and environmentally friendly nature. Recent advancements have emphasized on growing importance of biowaste-derived carbon dots as sustainable alternatives to traditional nanomaterials. Biowaste materials such as fruit peels, vegetable residues, agricultural waste, food-processing by-products, leaves, and waste biomass serve as renewable and low-cost carbon sources for the synthesis of carbon dots.

Green synthesis methods including hydrothermal treatment, microwave-assisted synthesis, pyrolysis, and solvothermal approaches are widely employed because of their simplicity, energy efficiency, and minimal environmental impact. These approaches not only reduce waste accumulation but also support the principles of circular economy and waste valorisation by transforming organic waste into value-added functional nanomaterials. Biowaste-derived carbon dots exhibit remarkable fluorescence characteristics, surface functionalization, water solubility, and excellent physicochemical properties, enabling their applications in diverse fields such as biosensing, bioimaging, drug delivery, photocatalysis, environmental monitoring, antimicrobial activity, and heavy metal detection.

Recent studies have also demonstrated their potential in forensic evidence analysis, sustainable energy systems and food safety analysis. Their eco-friendly synthesis and multifunctional applications make them highly suitable for future scientific and industrial developments. The integration of green chemistry and nanoscience through biowaste utilization can promote sustainable development, resource conservation, and scientific self-reliance, thereby supporting the broader national vision of building an innovative, environmentally responsible, and technologically advanced Future India.

Keywords: *Carbon dots, Biowaste, sustainable nanomaterials, green synthesis, Future India.*



“A Comparative of the Hardness of Water Samples Collected from Selected Areas of Jhansi (U.P.)”

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Abstract:

Water hardness is an important parameter used to determine the quality and suitability of water for domestic and industrial purposes. The present study deals with a comparative analysis of the hardness of water samples collected from selected areas of Jhansi. Water samples were collected from different sources such as hand pumps, bore wells, tap water, and local supply systems. The collected samples were analyzed for Total hardness, Calcium hardness, and Magnesium hardness using standard laboratory methods.

The results showed noticeable variations in hardness levels among different areas due to differences in geological conditions, water sources, and human activities. Some samples were found to have moderate hardness, while others showed high hardness values exceeding the desirable limits recommended for drinking water. High hardness in water may cause scaling in pipes, unpleasant taste, and reduced efficiency of soaps and detergents.

The comparative study indicates that groundwater sources generally possess higher hardness than treated municipal water. The study emphasizes the need for regular monitoring and proper water treatment in areas where hardness levels are high. This research is useful for understanding the quality of water in Jhansi and creating awareness about safe and healthy drinking water practices.

This study assesses the water hardness in selected areas in Jhansi, comparing the levels of Temperature, pH value, Total Dissolved Solids (TDS), Total hardness, Free Carbon-di-oxide, Dissolved Oxygen and Calcium, Magnesium, Chloride ions.

Conclusion:

The study highlights need for the water softening measures in Jhansi, particularly in area with high water hardness levels.

Recommendations:

- Implement water softening techniques like ion change or lime – soda process.
- Regularly monitor water quality to ensure safe drinking water.

Keywords: *pH value, Total Dissolved Solids (TDS), Free Carbon-di-oxide, Dissolved Oxygen and Total hardness, Calcium, Magnesium, Chloride ions*



“Biomedical Waste Management in Banda”

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Abstract:

During recent past years in Banda suddenly increases hospitals, Nursing home, Veterinary and pathology units which is a good sign for health but these units create a serious problem in the form of biomedical waste. Biomedical waste are syringes, needles, multiple vials, I-V set, empty medicine bottles, catheters and even blood bottles which had crossed the stipulated expiry date. The management of biomedical waste is a crucial issue in health and environmental management. Bio medical Waste shall not be mixed with other wastes. The biomedical waste (management and handling) rule notified in July 1998 under the environment protection act 1986 makes mandatory for all health care facilities respective of their size to treat biomedical waste generated by them. There are various methods of dealing with biomedical Waste including incineration, deep burial, autoclaving micro-waving, chemical disinfection and disposal in municipal land -fill etc. But in Banda there is no sufficient units work for biomedical Waste management.

Keywords: Biomedical waste, Management, hospitals.



“Ultrasonics in Defence: Conceptual Approaches for New Research”

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Abstract:

Ultrasonics has growing importance in defence science, offering safe and reliable ways to test materials, detect flaws, and support advanced technologies. For new researchers, it provides a pathway to connect physics with practical defence applications. This abstract outlines ideas for future studies in ultrasonic defence research, highlighting useful measurement techniques and possible directions. Basic methods such as pulse-echo can be applied to detect cracks in armour or structural components. Through transmission helps measure energy loss in protective materials, while resonance testing can estimate stiffness and durability of composites used in defence vehicles. Immersion testing supports detailed imaging of microstructures, useful for quality control. More advanced approaches, including phased-array ultrasonics, allow rapid scanning of large areas such as aircraft wings, and laser ultrasonics provide non-contact testing for sensitive or hazardous environments. Although no experimental data is presented, the aim is to raise guiding questions: How can ultrasonics improve the safety of defence equipment? How might AI enhance signal analysis for rapid decision-making? By sharing these directions, this work encourages collaboration and helps new scholars build a research path in ultrasonic defence applications.

Keywords: *Defence ultrasonics, Pulse-echo method, Transducer, Phased-array Ultrasonics etc.*



“Organizational Determinants of Work–Life Balance among Nursing Staff: A Step towards Developed India 2047”

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Abstract:

This study explores the organizational determinants that influence work–life balance among nursing staff in healthcare institutions in India. Nurses are very important for making sure that healthcare is delivered well and that the healthcare system as a whole works well. However, the demanding nature of the profession often creates challenges in balancing professional responsibilities with personal and family life. Factors such as long working hours, rotational shifts, staff shortages, heavy workload, occupational stress, and limited organizational support significantly affect the physical, emotional, and psychological well-being of nurses. It focuses on important organizational dimensions, including leadership support, workplace culture, staffing policies, communication practices, employee welfare initiatives, flexibility in scheduling, and availability of leave and support systems. These factors have a direct impact on job satisfaction, employee motivation, productivity, and quality of patient care. A supportive organizational environment not only enhances the well-being of nursing staff but also contributes to reduced burnout, improved retention, and better healthcare outcomes. The objective of this study is to highlight the growing need for healthcare institutions to adopt employee-cantered management practices that promote a healthy balance between work and personal life. Strengthening organizational support mechanisms for nursing professionals is essential for building a resilient healthcare workforce capable of meeting the future healthcare needs of the nation. The findings of the study may provide valuable insights for healthcare administrators and policymakers in advancing the vision of a healthier, productive, and developed India by 2047.

Keywords: Work–life balance, Organizational determinants, Nursing staff, Healthcare management, Occupational stress, Developed India.



“Assessment of Faculty Burnout and Career-Related Trauma in the Higher Education Sector of Bundelkhand”

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Abstract:

In India, higher education is rapidly increasing the faculty burnout, caused by career-related trauma such as administrative overburden; continue rejections of research grants, and chronic work-life imbalance. In the context of Viksit Bharat 2047-a vision built on science, management, and the humanities/arts-this is especially important, as the quality and well-being of higher-education faculty which shape the future professionals, researchers, and leaders of the nation.

This study was performed in the Bundelkhand region which comes in Uttar Pradesh, studying the relationship between career-related trauma and burnout among about 200 higher education faculty members from both public and private institutions. A quantitative, cross-sectional study was used, with an online Google-Form survey measuring emotional depletion, self-detachment, and reduced personal accomplishment through a locally adapted Maslach Burnout Inventory–Educators Survey (MBI-ES) and a 15-item Adverse Career Experiences Scale capturing administrative overload, research-related stress, and work-life imbalance. Data were analysed in Microsoft Excel using descriptive statistics, chi-square tests of independence, and independent-samples t-tests.

In which results showed a relatively high rate of moderate to high burnout, particularly in emotional depletion, with female faculty and those in private institutions more likely to report higher levels. With the view of Viksit Bharat 2047, the study suggest trauma-informed, context-sensitive interventions-such as workload limits, administrative automation, and gender-sensitive framework-to protect faculty well-being and support the national vision of a developed and humane India.

Keywords: Faculty Burnout, Career-Related Trauma, Higher Education, Bundelkhand Region, Work-Life Imbalance, Administrative Overload, Viksit Bharat 2047.



“A Comparative Study of Microorganism-remediation and Phytoremediation in Aquatic Site Polluted with Organic and Inorganic Contaminants at Lakshmi Tal, Jhansi (U.P.) India”

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Abstract:

Water is one of the most abundant substances found in nature. It is, in fact, a remarkable chemical medium, possessing unique properties that allow it to dissolve a wide variety of chemicals and hold them in suspension. However, today, clean water has become a precious commodity, and its quality is under threat from various sources of pollution. These include fertilizers, soil particles, chemical waste, and sewage discharged from both urban and rural areas. In India, approximately 70% of the water supply has become contaminated due to the discharge of domestic sewage and industrial effluents into natural water sources such as rivers, streams, and lakes.

In many parts of the city, water supply services provided by the Jhansi Municipal Corporation are unavailable. The Municipal Corporation supplies only fully treated surface water—a service that is accessible in only a few specific locations. The water supplied to the public is, to some extent, unsafe for consumption and also contains traces of chlorine.

Another contributing factor is the scarcity of rainfall in the Bundelkhand region, which remains arid throughout the year, leading to chronic water shortages in the city of Jhansi. The water in the Bundelkhand region is naturally hard in character, largely because the terrain is predominantly hilly. Furthermore, the presence of stone crushers and mines in areas adjacent to the city—such as Pratap Pura, Orchha, Tigela, Digara, and Bijauli—results in the contamination of drinking water with dust; this process also contributes to the increased hardness of both groundwater and borewell water. Water is sourced from nearby natural reservoirs like Antital and Lakshmi Tal; consequently, residents living in the vicinity of these water bodies frequently suffer from health issues, particularly kidney stones. The objective of this study is to investigate the physicochemical and microbiological properties of the water in Lakshmi Tal—a pond whose water quality has deteriorated due to a growing population and improper waste management—by employing bio-microbial and phytoremediation methods; this deterioration has rendered the water unsuitable for drinking.

Keywords: Physicochemical, Microbiological properties and Phytoremediation methods of the water in Lakshmi Tal.



“Internet of Things Security, Device Authentication and Access Control: A Review”

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Abstract:

The Internet of Things (IoT) has emerged as a transformative technological paradigm that has attracted substantial interest from both academia and industry. IoT facilitates the interconnection of internet-enabled devices, enabling seamless communication among devices and between humans and machines to accomplish shared objectives. With the rapid integration of IoT into daily life, individuals are becoming increasingly dependent on these systems for enhanced convenience, automation, and quality of life. Consequently, any security compromise within IoT environments can have severe implications for user privacy, operational reliability, and human safety, making security and privacy among the most critical challenges in IoT deployment.

This paper presents a comprehensive review of security issues in IoT environments and systematically classifies cyber attacks across different layers of the IoT architecture. Furthermore, the study examines the limitations of conventional security mechanisms, including cryptographic techniques, authentication frameworks, and key management schemes, when applied to resource-constrained IoT environments. Particular emphasis is placed on device authentication and access control, which remain among the most challenging yet insufficiently explored aspects of IoT security. The paper also consolidates and analyzes recent advancements in authentication and access control mechanisms, offering a detailed overview of contemporary research contributions in a unified framework.

Keywords: Internet of Things (IoT), Security, Authentication, Access Control, Cyberattacks, Wireless Sensor Networks (WSNs)



“खनन से प्रदूषण के दुष्प्रभाव व स्वास्थ्य समस्याएँ और जल प्रबंधन”

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सारांश:

जल प्रबंधन और खनन गतिविधियाँ आर्थिक विकास के लिए बहुत महत्वपूर्ण हैं, लेकिन इनका गलत संचालन पर्यावरणीय प्रदूषण और स्वास्थ्य समस्याओं का कारण बनता है। औद्योगिक अपशिष्ट, कृषि रसायन, सीवेज और अनियंत्रित जल संसाधनों का उपयोग नदियों और भूजल स्रोतों को नुकसान पहुंचा रहा है। खनन, विशेषकर कोयला क्षेत्रों जैसे झरिया, पारिस्थिति के संतुलन को खराब करता है और वायु, जल और जमीन को प्रदूषित करता है। इन गतिविधियों से जल जनित रोग (हैजा, टाइफाइड, डायरिया), फ्लोरोसिस, आर्सेनिक विषाक्तता और श्वसन संबंधी रोग (अस्थमा, सिलिकोसिस, फेफड़ों के रोग) जैसी गंभीर स्वास्थ्य समस्याएं उत्पन्न होती हैं।

खनन अपशिष्ट में भारी धातुएँ खाद्य श्रृंखला में प्रवेश कर दीर्घकालिक विषाक्त प्रभाव डालती हैं, जो बच्चों और मजदूरों पर विशेष रूप से घातक होता है। इसलिए यह अध्ययन सख्त पर्यावरणीय नीतियों, खनन के बाद भूमि पुनर्वास, प्रभावी अपशिष्ट शोधन और निरंतर जल प्रबंधन के माध्यम से प्रदूषण को नियंत्रित करने पर जोर देता है। दीर्घकालिक जन स्वास्थ्य और पर्यावरणीय सुरक्षा के लिए संतुलित और वैज्ञानिक दृष्टिकोण अपनाना अनिवार्य है।

संकेत शब्द: जलप्रबंधन; खनन प्रदूषण, जल प्रदूषण, वायु प्रदूषण, पर्यावरणीय नुकसान, जन स्वास्थ्य, जल जनित रोग, भारी धातु विषाक्तता, सिलिसिस; सतत विकास।



“फेक न्यूज़ और सोशल मीडिया का समाज पर प्रभाव”

एक समाज शास्त्रीय अध्ययन

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सारांश:

आधुनिक युग में सोशल मीडिया सूचना के आदान-प्रदान का सबसे प्रभावशाली माध्यम बन चुका है। फेसबुक, व्हाट्सएप, इंस्टाग्राम, ट्विटर (X) आदि प्लेटफॉर्म लोगों को तेजी से सूचना प्रसारित करने देते हैं, किन्तु इन माध्यमों के दुरुपयोग के साथ फेक न्यूज़ अर्थात् झूठी खबरों का प्रसार भी अत्यधिक बढ़ गया है। फेक न्यूज़ केवल गलत जानकारी नहीं होती बल्कि यह समाज में भ्रम तथा हिंसा जैसी सामाजिक तनाव, राजनीतिक ध्रुवीकरण तथा मानसिक अस्थिरता को बढ़ाती है। इसी संदर्भ में फेक न्यूज़ और सोशल मीडिया के समाज पर पड़ने वाले प्रभावों का समाजशास्त्रीय दृष्टिकोण के अध्ययन किया गया है। अध्ययन में यह स्पष्ट हुआ है कि सोशल मीडिया की तीव्र सूचना प्रणाली तथा लोगों के बिना सत्यापन जानकारी साझा करने की प्रवृत्ति फेक न्यूज़ के प्रसार को बढ़ावा देती है। इसका प्रभाव युवाओं, शिक्षा, राजनीति, सामाजिक संबंधों, धार्मिक सौहार्द तथा लोकतांत्रिक मूल्यों पर स्पष्ट रूप से देखा जा सकता है। शोध में यह भी बताया गया है कि डिजिटल साक्षरता, मीडिया जागरूकता तथा सरकारी नीतियां फेक न्यूज़ की समस्या को कम करने में महत्वपूर्ण भूमिका निभा सकती हैं।

Keywords: सोशल मीडिया, फेसबुक, व्हाट्सएप, इंस्टाग्राम, ट्विटर (X), प्लेटफॉर्म, ध्रुवीकरण, सौहार्द, डिजिटल साक्षरता, मीडिया जागरूकता।



“From Developing to Developed: The Convergence of Science, Management and Creative Arts for a Culturally Rooted India 2047”

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Abstract:

India’s ambitious vision of becoming a developed nation by 2047 (Viksit Bharat) demands a transformative and holistic approach that goes beyond conventional economic models. This paper explores the strategic convergence of **Science, Management, and Creative Arts** as a powerful multidisciplinary framework for building a **culturally rooted developed India**.

Science and technology provide the foundation for innovation, sustainability, and economic growth, while effective management ensures efficient implementation, governance, and scalability of development initiatives. Creative Arts, encompassing design, literature, performing arts, visual arts, and cultural heritage, play a vital role in preserving Indian identity, fostering creativity, and ensuring inclusive and human-centric development.

The study argues that the integration of these three domains is essential for achieving balanced progress that is economically prosperous, technologically advanced, socially inclusive, and culturally vibrant. Drawing upon conceptual analysis and examples from successful global and Indian case studies, this paper examines how scientific innovation guided by sound management principles and enriched by artistic creativity can address critical challenges such as sustainable development, education, healthcare, urbanization, and cultural preservation.

The findings suggest that a synergistic Science-Management-Arts nexus can accelerate India’s journey from a developing to a developed nation while ensuring that progress remains deeply rooted in Indian values, ethos, and cultural heritage. The paper concludes by proposing a multidisciplinary framework and policy recommendations for integrating Science, Management, and Creative Arts in national development strategies for Viksit Bharat 2047.

Keywords: Viksit Bharat 2047, Science-Management-Arts Convergence, Culturally Rooted Development, Interdisciplinary Approach, Sustainable Development, Indian Knowledge System



“Photocatalysis: An efficient method for Waste Water Treatment”

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Abstract:

Industrial expansion has resulted in water pollution becoming a serious problem in many developing countries. These water bodies contain abundant amounts of inorganic and organic substances, such as heavy metals, pharmaceutical waste, synthetic dyes, fertilizers, pesticides, etc., released from manufacturing plants. This significantly impacts aquatic ecosystems as well as human development, requiring effective removal technologies. Therefore, here we discuss a photocatalytic method for the removal of chemical pollutants from wastewater and also compare it with conventional techniques. Further, we also investigate different types of synthetic strategies to synthesized efficient photocatalyst.

Keywords: *Waste water treatment, Industrial expansion, photocatalyst, manufacturing plants, aquatic ecosystems, development, pharmaceutical waste, synthetic dyes, fertilizers, pesticides.*



"वेदों में विज्ञान: वैदिक एवं पौराणिक परिप्रेक्ष्य में वैज्ञानिक दृष्टि का समालोचनात्मक अध्ययन"

योगिता द्विवेदी

एम.एड. अंतिम वर्ष

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सारांश :

भारतीय वैदिक एवं पौराणिक साहित्य में वर्णित देवताओं का स्वरूप बहु स्तरीय एवं गूढ़ार्थ पूर्ण है। सामान्यतः देवताओं को धार्मिक आस्था, उपासना एवं आध्यात्मिक साधना के संदर्भ में देखा जाता है, किन्तु गहन अध्ययन करने पर स्पष्ट होता है कि इन देव स्वरूपों के माध्यम से प्राचीन भारतीय मनीषियों ने प्रकृति, ऊर्जा, खगोल, चिकित्सा तथा पर्यावरण संबंधी सिद्धांतों को प्रतीकात्मक रूप में अभिव्यक्त किया। प्रस्तुतशोध-पत्र में ऋग्वेद, यजुर्वेद, अथर्व वेद तथा रामायण और महाभारत के चयनित मंत्रों एवं प्रसंगों के आलोक में देवताओं की अवधारणा का वैज्ञानिक एवं समालोचनात्मक विश्लेषण किया गया है।

अध्ययन का उद्देश्य यह स्पष्ट करना है कि अग्नि, वायु, सूर्य, इंद्र, वरुण आदि देवता वस्तुतः प्राकृतिक तत्त्वों, ऊर्जा-स्रोतों, जल-चक्र, प्रकाश-ऊर्जा, वायु मंडलीय शक्तियों तथा ब्रह्मांडीय व्यवस्था के प्रतीक हैं। उदाहरणार्थ, अग्नि को ऊर्जा एवं रूपांतरण का सिद्धांत, सूर्य को प्रकाश एवं जीवन-ऊर्जा का स्रोत, इंद्र को विद्युत एवं वर्षा-चक्र का नियंत्रक तथा वरुण को जल-तंत्र एवं नैसर्गिक संतुलन का प्रतीक रूप में समझा जा सकता है। इस प्रकार देवताओं की संकल्पना प्राचीन भारतीय ज्ञान-परंपरा में वैज्ञानिक अवलोकन, अनुभव जन्यज्ञान तथा दार्शनिक चिंतन का समन्वित परिणाम प्रतीत होती है।

शोध में ऐतिहासिक-पद्धति, ग्रंथ-समीक्षा एवं तुलनात्मक विश्लेषण का उपयोग करते हुए यह प्रतिपादित किया गया है कि देवत्व के माध्यम से जटिल वैज्ञानिक सिद्धांतों को जन सामान्य के लिए सुलभ एवं स्मरणीय बनाया गया। यह अध्ययन केवल भारतीय परंपरा की वैज्ञानिक दृष्टि को रेखांकित करता है, बल्कि यह भी दर्शाता है कि आध्यात्म और विज्ञान परस्पर विरोधी होकर एक-दूसरे के पूरक रहे हैं।

अंततः, यह निष्कर्ष प्रस्तुत किया गया है कि वैदिक एवं पौराणिक देवताओं की अवधारणा को यदि प्रतीकात्मक एवं वैज्ञानिक दृष्टि से समझा जाए, तो वह प्राचीन भारत की ज्ञान-समृद्धि, पर्यावरणीय चेतना तथा ब्रह्मांड-दृष्टि का महत्वपूर्ण साक्ष्य सिद्ध होती है।

Keywords – देवता, विज्ञान, वेद, पौराणिक साहित्य, प्रतीकवाद, प्राकृतिक नियम, ऊर्जा, पर्यावरणीय



“Woman and Child Healthcare for Viksit Bharat 2047”

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Abstract:

Women and child healthcare is a fundamental pillar in achieving the vision of “Viksit Bharat 2047,” as the health and well-being of mothers and children directly influence the social and economic progress of the nation. A developed India requires accessible, affordable, and quality healthcare services that ensure safe motherhood, proper nutrition, disease prevention, and healthy child development.

India has made significant efforts through programs such as Ayushman Bharat, Poshan Abhiyaan, and National Health Mission to improve maternal and child healthcare. These initiatives focus on reducing maternal and infant mortality rates, promoting immunization, improving nutrition, and strengthening healthcare services in rural and urban areas.

Women’s healthcare includes maternal care, reproductive health, mental health awareness, and access to medical facilities, while child healthcare emphasizes vaccination, balanced nutrition, early diagnosis of diseases, and physical and cognitive development. Special attention to rural communities, education, sanitation, and health awareness is essential to reduce healthcare inequalities.

Investing in women and child healthcare not only improves quality of life but also strengthens human resources, economic productivity, and social development. A healthy population forms the foundation of a strong, inclusive, and developed India by 2047.

Keywords: Healthcare, Ayushman Bharat, National Health Mission, Poshan Abhiyaan



Local Heritage & Attractions

Jhansi the City of Queen

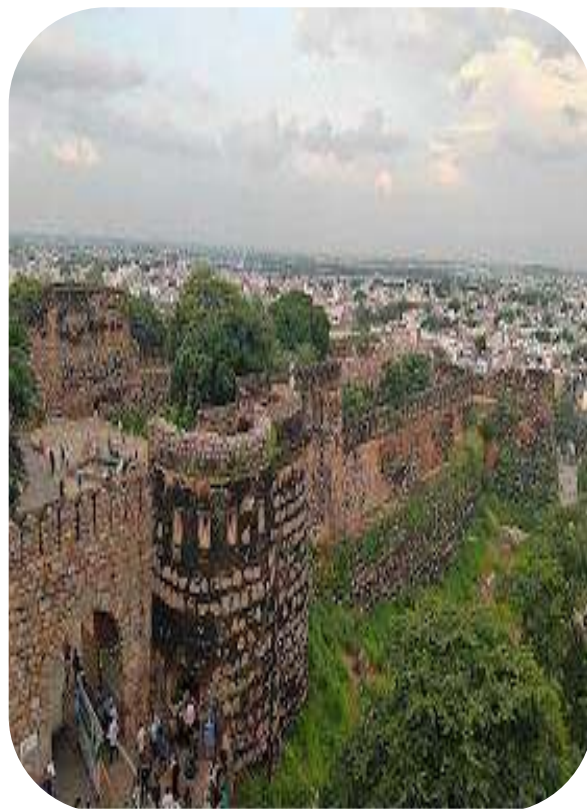
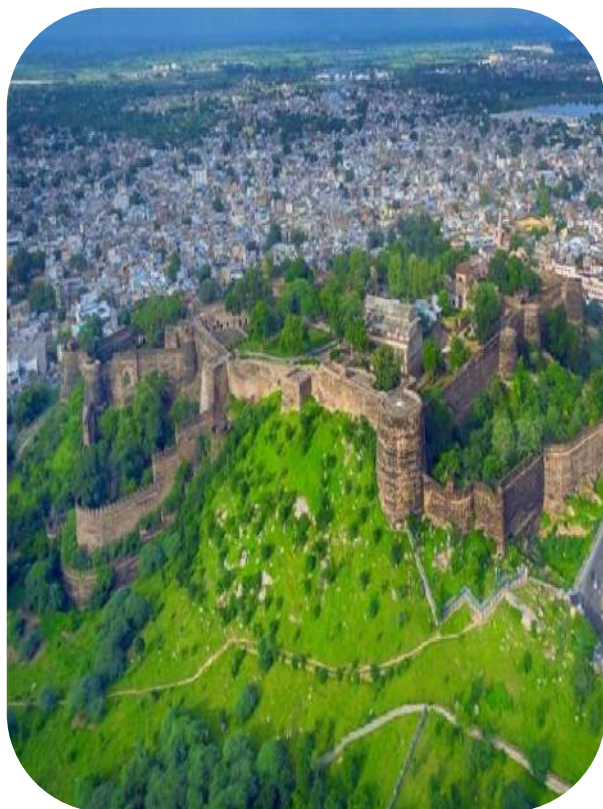
The city of Jhansi is an epitome of valour, sacrifice, and timeless historical heritage. Nestled in the heart of the culturally rich Bundelkhand region, the surrounding area offers several landmarks of immense national importance that visitors and delegates are encouraged to explore:

बुंदेले हरबोलों के मुँह हमने सुनी कहानी थी..
खूब लड़ी मर्दानी वह तो झाँसी वाली रानी थी...

Famous for the queen Lakshmi Bai, Jhansi has retained the charm and grandeur of yesteryears. From the shops and mansions to the monuments and temples, the city of Jhansi still recalls the period of 1857, the year of India's first struggle for freedom.

Jhansi Fort

Built by Raja Bir Singh Deo in 17th century, this towering majestic fortress stands as a living testimony to the First War of Indian Independence in 1857, immortalizing the unparalleled bravery of **Maharani Rani Lakshmi Bai**.



Orcha

Located just a short drive from the city along the serene Betwa River, this historic medieval town boasts spectacular architectural palaces, carved temples, and royal cenotaphs of the Bundela dynasty. The historic town of Orchha, nestled on the banks of river Betwa, was founded in the 16th century by the Bundela Rajput Chief, Rudra Pratap. The ancient town seems frozen in time, with its many monuments continuing to retain their original grandeur even to this day. Here you will find some of the most fascinating temples and palaces that will help you realise a childhood fantasy!



[Rani Mahal Jhansi](#)

The former royal palace of Rani Lakshmi Bai features stunning ancient wall paintings and multi-coloured architecture, now carefully maintained as an [Archaeological Survey of India \(ASI\) museum](#).



[Jhansi Govt Museum](#)

A premier treasure trove housing an elite collection of weapons, terracotta art, bronze sculptures, and exquisite coins mapping the dynastic history of Bundelkhand.

