

10th

**NATIONAL CONFERENCE ON
RECENT ADVANCES
IN CHEMICAL AND
ENVIRONMENTAL
SCIENCES**

Theme: *Quantum Materials (International Year of Quantum Science and Technology (IQST) to celebrate the 100th anniversary of quantum mechanics)*

MARCH 28-29, 2025



RACE

Organized by
School of Sciences, ITM University Gwalior



INTERNATIONAL YEAR OF
Quantum Science
and Technology



ABOUT SCHOOL AND DEPARTMENT OF CHEMISTRY AND ENVIRONMENTAL SCIENCES

The School of Sciences at ITM University stands committed to delivering high-quality theoretical and practical education across a broad spectrum of science disciplines, including Life Sciences, Mathematics, Physics, Chemistry, and Environmental Science. Central to the School's mission is offering cutting-edge courses and training that align with contemporary scientific challenges and meet the evolving demands of today's global job market. The School provides a diverse range of innovative undergraduate, postgraduate, and doctoral programs across its various departments, including Biotechnology, Food Technology, Forensics, Physics, Chemistry, and Mathematics. With a vision to nurture a holistic scientific perspective, the School equips students with a robust foundation in sciences while fostering interdisciplinary learning. A distinguishing feature of the School is its renowned Nano Research Laboratory, which undertakes advanced research in nanosciences and receives funding from prestigious government-sponsored research projects. Additionally, the P C Ray Centre for Interdisciplinary Research serves as a hub for fostering collaborative and interdisciplinary research in emerging scientific areas.

The Department of Chemistry and Environmental Sciences stands as a dynamic gateway for students seeking in-depth knowledge and expertise in the fields of Chemistry and Environmental Science. The Department addresses some of the most pressing environmental and chemical challenges of the modern era, preparing students to make meaningful contributions in these crucial domains. Faculty members in the Department are actively engaged in pioneering and impactful research, supported through industry collaborations and government-funded projects. Their research spans diverse fields such as: Synthesis of metal complexes and bioactive molecules, Environmental chemistry and management, Supramolecular chemistry, Energy-efficient technologies, Occupational health and safety, Advanced material sciences. These programs provide students with unparalleled opportunities for advanced education, hands-on research, and professional development in cutting-edge areas of chemical and environmental sciences.

CONFERENCE TRACKS

Track 1: Quantum Science and Materials: Dr Uday P Gahlaut

- Quantum materials and nanotechnology
- Quantum dots and thin films
- Quantum sensors and devices
- Superconductivity and quantum computing
- Photonic and optoelectronic materials

Track 2: Environmental Chemistry, Sustainable Development and Energy: Dr Gourav K Singh

- Green chemistry and sustainable technologies
- Quantum advancements for water purification and resource management
- Soil remediation and waste management
- Renewable energy and biofuels
- Energy-efficient quantum devices for industrial applications
- Smart materials for energy storage
- Environmental policies and climate mitigation

Track 3: Biotechnology and Health Sciences: Dr Sadhna Chaturvedi

- Advances in bioinformatics and genomics
- Biomedical applications of nanomaterials
- Environmental microbiology and bioremediation
- Nanomedicine and drug delivery systems
- Quantum-enhanced bioimaging and diagnostics
- Bioinformatics and quantum computing in biological sciences
- Quantum approaches to protein structure analysis

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About the Conference

The School of Sciences, ITM University, Gwalior, is proud to announce the 10th National Conference on Recent Advances in Chemical and Environmental Sciences (RACE). This year, the conference aligns with the celebration of the International Year of Quantum Science and Technology (IYQST), marking the 100th anniversary of quantum mechanics.

Quantum science and technology have emerged as transformative fields, driving innovations across diverse disciplines. The year 2024 celebrates a century of quantum mechanics, honouring the groundbreaking discoveries that have redefined our understanding of the microscopic world. Quantum principles underpin much modern advancement, from semiconductors and lasers to emerging quantum computing, quantum cryptography, and quantum sensing. These developments are poised to revolutionize industries such as materials science, healthcare, energy, and sustainable technologies.

The theme for the 10th RACE is "Quantum Materials and Sustainable Innovations for Future Technologies." This interdisciplinary conference will serve as a platform for scientists, academicians, research scholars, and industry experts to deliberate on cutting-edge advances and explore synergies between quantum science, chemical sciences, environmental sustainability, and emerging technologies.

Participants will have an excellent opportunity to present their research, exchange ideas, and foster collaborations that address global challenges while contributing to technological advancements and sustainable development.

ITM UNIVERSITY GWALIOR – A SILHOUETTE

Immerse yourself in a vibrant learning experience at ITM University Gwalior, a multidisciplinary university nestled amidst a lush green campus adorned with artistic sculptures. We offer a diverse range of programs in engineering, AI, cybersecurity, management, agriculture, pharmacy, nursing, education, and more.

ITM University distinguishes itself through its experiential learning approach. Our pedagogy is expeditionary, incorporating activity-based learning, project-based learning, problem-based learning, and real-world industrial projects. This ensures you graduate with not just theoretical knowledge, but practical skills and industry preparedness.

In fields like nursing and agriculture, learning is further enhanced by clinical practices in renowned hospitals and hands-on experiences through RAWE and ELP programs. What's more, we believe that Artificial Intelligence is a cornerstone of future careers. Therefore, at ITM University Gwalior, AI learning is integrated into all our programs.

We go beyond academics, fostering holistic development by weaving Indian knowledge systems into our curriculum. Specially crafted courses and signature programs introduce you to this rich heritage, alongside

contemporary disciplines. This unique blend equips you to be a well-rounded graduate who understands your roots while embracing the future.

We host engaging events like international sculpture symposium, Indian dance festivals, classical music concerts, and theatre festivals. These initiatives ensure students graduate as a responsible citizen with a strong cultural identity.

At ITM University, we understand the importance of industry collaboration. Our strong network of partners, established through MoUs signed which connects you with leading companies like Celonis, Alteryx, AWS, Blue Prism, Microchip, Jk Tyre, and medical colleges. These collaborations span diverse sectors, with a focus on emerging fields like deep learning, and semiconductors. Dedicated Centers of Excellence further strengthen these partnerships, providing unparalleled exposure to industry practices.

Beyond academics and industry connections, ITM University offers state-of-the-art sports facilities conforming to international standards. Enjoy playing football, athletics, basketball, handball, badminton, or work out in our well-equipped gym.



Track 4: Food Technology and Agriculture: Mr Akshay Singh Sengar

- Quantum sensor for Food safety and quality control
- Nanotechnology for food preservation and packaging
- Smart agriculture solutions using quantum technologies
- Nutraceuticals and functional foods for human health
- Quantum-based analytical tools for food testing

Track 5: Forensic Science: Mr Anuj Sharma

- Quantum tools for forensic analysis and trace material detection
- Quantum cryptography in data security for forensic applications
- Environmental forensics
- Occupational safety and forensic nanotechnology
- Emerging contaminants and risk assessment
- Advances in forensic nanotechnology

CALL FOR PAPER

Researchers, academicians, industry experts, and students are invited to submit their original and review work with abstracts and full papers under the above-mentioned tracks for presentation, either orally or via posters, at the conference. Contributions must align with the conference theme and present original, innovative, and impactful research findings.

The abstract and papers can be submitted to race2025@itmuniversity.ac.in. Accepted abstracts will be featured in the conference's souvenir.

Abstract submissions should adhere to specific guidelines: a one-page abstract detailing experimental findings on A4 size paper, containing no more than 350 words. The text should be typed in Times New Roman Font (size 12) with single spacing. Submission must be made before the specified deadline. Additionally, authors are responsible for ensuring the originality of their content and confirming its freedom from plagiarism. Selected papers presented during the conference will have

the opportunity to be published either as proceedings in esteemed indexed journals or as book chapters in an ISBN-carrying publication.

ORAL/POSTER PRESENTATION

Poster boards will be provided for poster presentation. Each poster will be allotted a board space measuring 120*150cm (48**60). The text should be rendered with a sufficiently large font to be legible from a distance of 1-2 meters. Graphs, tables, figures, photographs or maps be used within the limits of the board space allocated. The oral presentation shall be 10 minutes duration. Details for online /offline presentations shall be shared in due course of time.

AWARDS

Best oral/poster presentations will be awarded in the valedictory function of the conference in each category with first, second and third positions.

ACCOMMODATION

Gwalior has a number of hotels with a tariff ranging from INR 1500/- to INR 5000/-/Hotels are located within a radius of about 10 km from the ITM University campus. Those who are desirous of hotel accommodation are requested to inform the organizer well in advance.

REGISTRATION

Registration for the conference can be done online through link. The last date of registration shall be March 15, 2025.

IMPORTANT DATES

Last date of abstract paper submission: **07 March, 2025**

Full-length paper submission: **15 March, 2025**

Notification acceptance with in 7 days of submission

Last date of registration: 15 March, 2025

Conference date: 28 and 29 March, 2025



Conference link

Shall be shared with registered participants.

For more details please visit our conference website:
<https://itmuniversity.ac.in/academics/race2025>

SCAN QR FOR
REGISTRATION



REGISTRATION FEE

Delegates from Industries Rs. 2000/-
Delegates from Academics Rs. 1000/-
Students* Rs. 800 /-

to submit a bonafide certificate from the Head of the Department/
Institution Online payment can be made to: HDFC Bank Dal Bazar,
Gwalior, A/cNo.50200012280228, IFSC code HDFC0003661

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Track II: Dr. Gaurav K Singh
Track III: Dr. Sadhana Chaturvedi
Track IV: Dr. Akshay Singh Sengar
Track V: Mr. Anuj Sharma

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