



One-week Short Term Skill Development Training Program on
“Fermentation Technology”
9th – 13th February 2026

REGISTRATION FORM

Google form link: -
<https://forms.gle/xiWx1L3qHGT5BAgY9>
Copy and paste the link for registration

Name:

Qualification:

College/Institute:

Permanent Address:

E-mail:

Mobile No.:

Cheque/DD Amount & No

Dated:

(Draft in favor of DIRECTOR, NIT, Raipur, payable at SBI, GCET Raipur Branch.)

Registration charge:

UG Students/NIT RR students: Rs. 500/-

PG/Research Scholars Rs. 750/-

For Faculty members Rs. 1000/-

Additional 18% GST will be applicable in each category of the participant.

Note:

- Draft in favor of DIRECTOR, NIT, Raipur, payable at SBI, GCET Raipur Branch.
- Fee is non-refundable. The participants will arrange travel expense, boarding and lodging.
- Participant must send the scanned copy of the filled registration form along with the proof of payment through email to the coordinators.

Payment should be made to:

Account No.: 38027633250

Name: Director, NIT Raipur

IFSC: SBIN0002852

Or use **QR code** given here:



Signature of the Participant

Place:



NIT RAIPUR

Chief Patron

Dr. N.V. Ramana Rao

Director, National Institute of Technology,
Raipur

Patron

Dr. Guru Prasad Subhash Chandra Mishra

Dean R&C, National Institute of Tech,
Raipur

Convenor

Dr. Pratima Gupta

Professor, Head, Dept of Biotechnology,
National Institute of Technology, Raipur

Coordinators

Dr. J. Satya Eswari

Associate Professor,
Dept of Biotechnology
National Institute of Technology
Raipur

Dr. Sharda Bharti

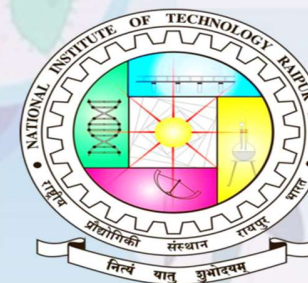
Assistant Professor
Dept of Biotechnology
National Institute of Technology
Raipur

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“Fermentation Technology”

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Organized by

Department of Biotechnology



National Institute of Technology Raipur
G.E. Road, Raipur-492010, Chhattisgarh.

Sponsored by: Petal Biotech



Contact Us:

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Limited hostel facilities are available for participants,
and a fee will be charged.





About the Institute:

National Institute of Technology Raipur, located on a 100-acre campus in the capital city of Chhattisgarh, is one of India's premier institutes of engineering and technology. Established in 1956 as Government Engineering College Raipur, it was inaugurated by Hon'ble Prime Minister Pt. Jawaharlal Nehru and upgraded to NIT status in 2005. The institute has grown significantly and presently offers 12 undergraduate, 11 Postgraduate (including M.C.A and M.Tech. in Applied Geology) and 18 Ph.D programs, along with active research, consultancy, and strong industry collaboration with leading organizations in the region. More details about NIT Raipur are at: <http://www.nitr.ac.in>.

About the Department:

The Department of Biotechnology at NIT Raipur was established in 2003 and is committed to excellence in teaching, research, and innovation. The department is equipped with well-established laboratories, including Immunology, Microbiology, Bioinformatics, Cell and Molecular Biology, Environmental Biotechnology, Drugs and Pharmaceuticals, Instrumentation, Biochemistry, and Enzyme Technology labs. Faculty members actively contribute to high-quality research with regular publications in SCI-indexed journals and patents. The department currently offers B.Tech and Ph.D. programs, fostering skilled biotechnologists and future researchers.

Objective of the program:

- To provide participants with a comprehensive understanding of both fundamental and advanced concepts of "Fermentation Technology".
- To deliver hands-on training in lab-scale fermenter design, fermentation optimization, and scale-up using modern analytical, experimental, and computational tools.
- To familiarize participants with current research advancements and industrial applications in bioprocessing, downstream processing, and bioproduct development.
- To foster interdisciplinary learning and enhance collaboration among academia, research laboratories, and industry stakeholders.
- To build a skilled workforce capable of addressing real-world challenges in biotechnology and contributing to sustainable technological growth.

Scope of the Workshop

This one-week self-funded short-term skill development program in Fermentation Technology seeks to provide participants with fundamental knowledge and practical skills pertinent to contemporary bioprocessing. The course covers principles of fermentation, microbial growth kinetics, medium formulation, and bioreactor design. There will be useful experience with process optimization, monitoring, and scale-up techniques. The program also includes downstream processing, purification methods, and analytical validation tools. Computational methodologies, including modelling and statistical optimization, will be discussed. The focus will be on industrial applications, sustainability-driven bioprocessing, and emerging developments in fermentation science to improve employability and research competency.

Hands on Training on:

- Preparation of fermentation media and growth of seed culture for fermentation set-up
- Inoculum development and Lab scale fermenter set-up
- Optimization of Fermenter Set-up Using Simple Factorial/RSM Design and Artificial Intelligence Tools
- Demonstrate the immobilization of seed culture for enhanced fermentation processes.
- Reuse of immobilized beads
- Operation of Lab scale fermenter
- Data collection and real time analysis
- Downstream processing for product recovery
- UV-Vis/HPLC analysis for product quantification
- Model generation, validation, and interpretation

Course Outline

Fundamentals of Fermentation Technology

Overview of bioprocess industries and applications
Concepts of bioreactors
Basic principles: growth kinetics, stoichiometry, mass & energy balance

Fermentation Technology and Bioproducts

Various types of Bioreactors for large-scale product formation
Optimization of fermentation parameters
Industrial case studies in biomanufacturing

Downstream Processing and Purification Techniques

Cell separation, product recovery, and purification methods
Process intensification and cost-effective strategies
Analytical tools and process validation

Modeling, Simulation, and Process Optimization

Application of statistical tools (RSM, DoE)

Sustainable Bioprocessing and Industrial Perspectives

Scale-up process, Bioprocess integration for environmental sustainability, Green and eco-friendly production systems

For More Details click

<https://www.nitr.ac.in/conference.php>

