



केन्द्रीय नमक व समुद्री रसायन अनुसंधान संस्थान  
(वैज्ञानिक तथा औद्योगिक अनुसंधान परिषद, भारत)  
गिजूभाई बधेका मार्ग, भावनगर 364002, गुजरात

**CSIR- Central Salt & Marine Chemicals Research Institute**  
(Council of Scientific & Industrial Research)  
Gijubhai Badheka Marg, Bhavnagar – 364 002 (Gujarat)  
[www.csmcri.res.in](http://www.csmcri.res.in)



CSIR Integrated Skill Initiative

## सी एस आई आर एकीकृत कौशल पहल

### **"CSIR-Integrated Skill Initiative"**

CSIR-Central Salt & Marine Chemicals Research Institute (CSMCRI), Bhavnagar, invites applications from eligible candidates for the following skill development training program under the **CSIR-Integrated Skill Initiative**.

#### 👉 **Training Program Details**

Training Program	Duration	Maximum Intake	Qualification & Remarks	Course Fee	Last Date of Application
Fermentation Technology	16 <sup>th</sup> to 19 <sup>th</sup> March, 2026	Seats are limited	B.Sc./M.Sc. & above	Rs. 1000/- + 18% GST for self-sponsored candidates and Rs. 5000/- + 18% GST for industry sponsored candidates.	8 <sup>th</sup> March, 2026

**Venue:** CSMCRI Auditorium, CSIR-CSMCRI, Bhavnagar

**Email for queries & applications:** [sourishb.csmcri@csir.res.in](mailto:sourishb.csmcri@csir.res.in)

#### **Key Information**

- The course will be conducted **in offline mode**.
- **Lodging & boarding** arrangements are to be made by the candidates themselves.
- **Certificates** will be awarded to candidates who successfully complete the course.
- **Training Venue:** CSIR-CSMCRI, Bhavnagar.

#### **How to Apply & Selection Process**

1. Candidates must apply using the **application format provided with this advertisement**.
2. Applications must be accompanied by **one self-attested set of documents**.
3. Applications and queries should be sent via email to [sourishb.csmcri@csir.res.in](mailto:sourishb.csmcri@csir.res.in)
4. **Incomplete applications will not be considered.**
5. This is a **training program only** and does not confer any right/claim for extension or absorption in CSIR-CSMCRI/CSIR.
6. **No travel or other allowances** will be paid to candidates for attending the training program.

👉 **Empower your career with hands-on training in Fermentation Technology. Apply now and secure your seat before 8<sup>th</sup> March 2026.**

### Fee Structure

**(Payment only through RTGS/ NEFT)**

Amount (INR)	:	
Bank Name	:	
Branch Name	:	
Account No.	:	
Transaction ID and Date	:	

**Fee structure (non-refundable):**

Rs. 1000/- + Rs.180/- GST = Rs.1180/-	Category I : Self- sponsored  [Students, Individual (other than student) and Entrepreneur (as an individual)]
Rs. 5000/- + Rs.900/-GST = Rs.5900/-	Category II : Any sponsored candidate  (Government, Industry and sponsored by Entrepreneur)

**Electronic Fund Transfer Account Details**

1	Name of account holder	DIRECTOR, C.S.M.C.R.I.
2	Address	GIJUBHAI BADHEKA MARG, BHAVNAGAR 364002
3	e-mail address	<a href="mailto:fao@csmcri.org">fao@csmcri.org</a>
4	Phone No./Mobile No.	0278-2471792
5	Fax No.	0278-2567562
6	Permanent Account Number (PAN)	AACCC1313P
7	Particulars of Bank Account	
	A. Name of the Bank	STATE BANK OF INDIA
	B. Name of the Branch	WAGHAWADI ROAD BRANCH
	C. Branch Code	10863
	D. Address	Shubham Shop No.G2/3, Plot No.2569 E1/2, Waghawadi Road Opp. Gulista Ground, Bhavnagar-364002 e-mail: <a href="mailto:sbi.10863@sbi.co.in">sbi.10863@sbi.co.in</a>
	E. Telephone No	0278- 2569884
	F. Account No.	30267310153
	G. Type of Account	SAVINGS BANK ACCOUNT
	H. IFSC Code (RTGS/NEFT)	SBIN0010863
	I. MICR code	364002023

## TRAINING PROGRAM ON "FERMENTATION TECHNOLOGY"

### Location

CSIR-Central Salt & Marine Chemicals  
Research Institute (CSIR-CSMCRI)  
Bhavnagar, Gujarat, India



### Coordinator



Dr. Sourish Bhattacharya,  
Senior Scientist,  
Process Design & Engineering Division,  
CSIR-CSMCRI,  
G.B. Marg, Bhavnagar-364002 (Gujarat)  
E-mail: sourishb@csmcri.res.in  
Tel: 0278-2567760 Ext 6300

Discover the power of fermentation technology in our skill development training program!

Unlock the secrets of this versatile process that shapes industries including food production, pharmaceuticals, environmental protection, and biofuel generation.

- **Food Production:** Delve into the art of fermenting bread, cheese, yogurt, beer, wine, and more. Learn how fermentation preserves food, enhances flavor, and boosts nutritional value.
- **Pharmaceuticals:** Explore how fermentation produces antibiotics, vaccines, enzymes, and therapeutic proteins like insulin. Master cost-effective methods for large-scale production.
- **Biofuel Generation:** Dive into the world of biofuels like ethanol and biodiesel. Harness the power of microorganisms to convert biomass into usable fuels, reducing reliance on fossil fuels and promoting environmental sustainability.
- **Waste Treatment:** Discover how fermentation transforms organic waste into biogas, reducing waste volume and generating renewable energy. Explore its applications in environmental conservation.
- **Biotechnology:** Uncover the role of fermentation in producing biomolecules for medicine, agriculture, and industry. Learn to synthesize enzymes, vitamins, and organic acids through microbial fermentation processes.
- **Drug Development:** Gain insights into how fermentation technology drives drug development. Explore the production of antibiotics, statins, and immunosuppressant through genetic modification of microorganisms.
- **Sustainable Practices:** Embrace fermentation as a solution to food security, environmental degradation, and resource depletion. Learn eco-friendly production processes that utilize renewable resources and reduce waste generation.

- **Enhanced Food Production Skills:** Learn to preserve food, enhance flavor, and improve nutritional value, empowering you to create a wide range of fermented products.
- **Empowerment in Biofuel Generation:** Acquire the skills to produce biofuels like ethanol and biodiesel, contributing to sustainable energy solutions and reducing environmental impact.
- **Expertise in Waste Treatment:** Explore how fermentation can transform organic waste into renewable energy sources like biogas, positioning you as a leader in environmental conservation practices.

## Training Program Curriculum

### Theory sessions:

#### **Basic Learning Modules**

- Training on fermentation principles.
- Bioreactor design.
- Growing microorganisms in fermenter.
- Hands on pilot scale fermentation experiences.
- Critical control parameters.

#### **Topics to be Discussed**

- Critical components of an industrial bioreactor.
- Importance of mixing and aeration: Mass Transfer.
- Scale up of fermentation process.
- Downstream (purification) process and product formulation.
- Material and energy balance computations.
- Process Economics.

### Practical Sessions:

- Detailed understanding of the principles of Fermenter design, microbial fermentation process and production economics.
- Apply biological and engineering principles in cultivating microorganisms in fermenters.
- Assess parameters critical for fermentation such as aeration, agitation ad KLa estimation.
- Attain practical skills on fermenter sampling, product yield and microbial growth estimation, harvesting of culture and cleaning of fermenter.
- Analyse problems encountered during fermentation process.

## Faculty



Dr. Sourish Bhattacharya  
CSIR-CSMCR



Dr. Debashish Ghosh,  
IIP, Dehradun



Prof. Heba H. Salam  
NRC, Cairo, Egypt



Dr. Mangesh Vetal  
Head, TMD, NCL, Pune



Dr. Rahul Bhambure  
NCL Pune



Prof. Antonio Zuorro,  
Sapienza University,  
Rome



Dr. Kanhaiya Kumar  
IIIM Jammu



Dr. Monica Trif  
CENTIV Germany



Mr. R. K. Dhandhukiya,  
CSIR-CSMCR



Mr. S. R. Prajapati,  
CSIR-CSMCR



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**Dr. Sourish Bhattacharya** serves as a Principal Scientist at CSIR-CSMCRI, Bhavnagar, Gujarat, India. He possesses a strong academic and research background in microalgal biotechnology, with expertise spanning microalgal biofuels, biopolymers, and nutraceuticals for therapeutic applications.

**Dr. Debashish Ghosh** brings over 17 years of R&D experience in microbial fermentation and bioprocess development. His work focuses on advancing bioprocesses from biomass to second- and fourth-generation biofuels, oleochemicals, nutraceuticals, and biopolymers through ethanologenic and oleaginous yeast-mediated fermentation. His expertise also encompasses material resource efficiency and life cycle impact assessment. He currently heads the Biochemistry and Biotechnology Area within the Material Resource Efficiency Division at CSIR-IIP.

**Prof. Heba H. Salama** is an Associate Professor at the National Research Centre, Food Industries and Nutrition Research Institute, Dairy Science Department, Dokki, Cairo, Egypt. Her research is dedicated to dairy science and technology, with a focus on advancing innovations in the field.

**Dr. Mangesh Vetal** leads the Technology Management Group at NCL, Pune, with extensive experience in technology transfer and commercialization.

**Dr. Rahul Bhambure** is a Senior Scientist at NCL, Pune. His specialization lies in process development for protein drug molecules, particularly those employed in the treatment of infectious diseases.

**Prof. Antonio Zuorro** is a Professor at Sapienza University, Rome, Italy. His primary area of expertise is microbial fermentation, with significant contributions to the field.

**Dr. Kanhaiya Kumar** serves as a Senior Scientist at CSIR-Indian Institute of Integrative Medicine (IIIM), Jammu, with specialization in fermentation and microbial biotechnology. His early research addressed bioenergy production, secondary metabolite extraction, and CO<sub>2</sub> sequestration using microalgae. During his tenure at NTNU, he expanded his focus to deep-phenotype studies of microorganisms, particularly Streptomyces, for antibiotic discovery through metabolomics and fermentation technology.

**Dr. Monica Trif** has participated in the Socrates Intensive Programme on *Food and Health* and currently works as Project Manager and Product Development Manager. With over 15 years of expertise in food and nutraceutical research, she has contributed to numerous international and national research and innovation projects. Her work includes the development of more than 10 utility models, securing intellectual property rights for novel inventions.

**Mr. Rajeshkumar K. Dhandhukiya** is a Senior Technical Officer at CSIR-CSMCRI, Bhavnagar, with a background in Production Engineering. He contributes to research, technology development, and institutional projects in the field of marine chemicals and allied sciences.

**Mr. Sameerkumar R. Prajapati** is a Technical Officer at CSIR-CSMCRI, Bhavnagar, with a B.E. in Chemical Engineering. His expertise includes process design, scale-up, pilot plant operations, and fermentation technology, along with hands-on experience in chemical plant commissioning and client training.



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## **TRAINEE ENROLLMENT FORM**

TITLE OF SKILL DEVELOPMENT PROGRAM	:	<b>Fermentation Technology</b>			
DATE(S), TIME AND VENUE	:	16 <sup>th</sup> to 19 <sup>th</sup> March, 2026 <b>CSIR-CSMCRI, G. B. Marg, Bhavnagar – 364 002 (Gujarat)</b>			
FULL NAME OF TRAINEE	:				
FATHER'S / HUSBAND'S NAME	:				
DATE OF BIRTH (DD/MM/YYYY)	:				
GENDER (MALE / FEMALE / OTHERS)	:				
CATEGORY (SC / ST / OBC / EWS / GENERAL)	:				
PHYSICALLY DISABLED (YES / NO)	:				
CURRENT STATUS (Please <input checked="" type="checkbox"/> )	:	Working	Entrepreneur	Student	Unemployed
QUALIFICATIONS	:				
PHOTO ID NUMBER (Aadhaar/ PAN/ Voter ID/ Passport)	:				
MOBILE NUMBER	:				
ALTERNATE MOBILE NUMBER	:				
EMAIL ADDRESS	:				
TRAINEE'S DOMICILE (RURAL / URBAN)	:				
ADDRESS	:				
DATE:					
SIGNATURE OF APPLICANT					