



Ministry of Human Resource Development  
Government of India  
sponsored  
GLOBAL INITIATIVE OF ACADEMIC NETWORKS



course on

**“Application of Fluidized Bed Technology for  
a Sustainable Environment (AFBTSE-2025)”  
(Hybrid Mode)**

**January 20-24, 2025**

Organized by  
**Department of Chemical Engineering  
National Institute of Technology Rourkela  
Odisha- 769008, India**



Coordinators

**Prof. Abanti Sahoo : Course Coordinator  
Prof. Hara Mohan Jena : Course Coordinator  
Prof. Shishir Kumar Sahu : Local GIAN Coordinator**

## COURSE OVERVIEW

Manmade chemicals and chemical –derived products constitute the most significant consumer products of modern society. The increasing production of solid wastes from various sources such as municipalities, hospitals and industries requires that sustainable waste management systems act as a “filter” between human activities and the environment. Waste Management and development of technologies for energy production with special emphasis on the possibility to improve the value of energy and materials output are of great importance for a modern society. Therefore there is necessity of updating the knowledge technically and economically with the state-of-the-art development for the innovative processes such as

- (a) Fluidized bed combustion and gasification
- (b) Gas cleaning by fluidized bed reactor
- (c) Waste Management
- (d) Waste Heat Recovery
- (e) Wastewater Treatment

Chemical engineering deals with the technology of manufacturing the products economically, safely and with minimal impact on the environment. But it is not possible to implement the ideas directly for fabrication of units or changing the parameters automatically to improve the quality of the products. That is why there is necessity of simulation and modeling. The following areas will be discussed in detail in this course with hands-on-session for simulation and modeling.

## OBJECTIVES

The primary objectives of the course are as follows:

- i) Exposing participants to the fundamentals of Fluidization Technology
- ii) Fundamentals of simulation and modeling and of Fluidized Bed Technology
- iii) Process design with CFD and/or ASPEN Plus Simulation
- iv) Understanding of Treatment of Gaseous and Liquid Effluents with solid waste management and implementation of Fluidized bed technology for a sustainable environment

## ABOUT THE INSTITUTE & DEPARTMENT OF CHEMICAL ENGINEERING

NIT Rourkela has made a rapid progress as an Institute of higher learning, in the last decade. Department of Chemical Engineering was established in 1963. Since its inception, the department is under dynamic progress and is reputed for imparting quality education both at B. Tech, M. Tech levels. The academic programme of the department not only highlights the core subjects but also portrays the area of research in the field of Engineering and Science offered by the faculty members. The department also envisages sponsored projects funded by different sponsoring agencies such as DST, CSIR, MOEF, MNRE, DOF, ISRO, SHELL, etc. The research activities of the faculty members have been placed in reputed journals. Besides, a good number of research scholars are working towards the PhD degree. The department has well equipped modern laboratories with sophisticated equipment in the areas of Process Dynamics & Control, Reaction Engineering, Fluid Dynamics, Simulation, modeling and Optimization Techniques, CAD, Process Technology, Fuels & Combustion, Nanotechnology and Catalysis, Biochemical Engineering, Heat & Mass Transfer, Environmental Engineering, Fluidization Engineering, Processing & Handling of Material etc. Many equipment in the department include BET surface area analyzer, TGA, HPLC, GC, GC-MS, Nanoparticle size analyzer, surface tensiometer, contact angle meter, fluorescence spectrophotometer, FTIR, Gas Analyser, TEM, SEM, Ion Chromatography and ICP-OES etc.

## FOREIGN FACULTY



### Prof. Feridun Hamdullahpur

Was the University of Waterloo's sixth president and vice-chancellor (2010-2021) and has been an engineer, educator and leader over the span of his career in research and higher education. A professor of mechanical engineering, Professor Hamdullahpur holds a PhD in chemical engineering from the Technical University of Nova Scotia after earning bachelor's and master's degrees in mechanical engineering from the Technical University of Istanbul. Throughout his career, Professor Hamdullahpur has been an active researcher in thermo-fluids and energy engineering, a passionate teacher and an academic administrator. He has authored hundreds of scientific and academic publications and supervised over 50 graduate students. He was named a Fellow of the Canadian Academy of Engineering in 2014. He has served in various academic and administrative roles, including as a vice president academic and provost at the University of Waterloo. Professor Hamdullahpur was named a Specially Elected Fellow of the Royal Society of Canada (RSC) in 2018. This designation recognizes individuals who have made exceptionally valuable contributions to promoting the objectives of the RSC in ways that contribute significantly to Canadian society. In acknowledgment of Professor Hamdullahpur's leadership in education and innovation, he was awarded the Queen Elizabeth II Diamond Jubilee Medal in January 2013.

## HOST FACULTY



### Prof. Abanti Sahoo

Received her B.Tech., M.Tech. and Ph.D degree in Chemical Engineering from the National Institute of Technology Rourkela, Odisha in 1989, 1994 and 2005 respectively. She joined as lecturer in the Department of Chemical Engineering, National Institute of Technology Rourkela in 1991 and is currently serving as Professor. Her prime areas of teaching and research include Fluidization Engineering, Energy and Environmental Engineering. Dr. Sahoo has published 81 journals, 60 conference papers, and 5 book chapters. She has supervised many B.Tech., M.Tech. and PhD dissertations. She has also executed many sponsored R &D projects and industrial consultancy projects.



### Prof. Hara Mohan Jena

Obtained his M.Tech. and Ph.D degree in Chemical Engineering from the National institute of Technology Rourkela, Odisha. Joined the Department of Chemical Engineering, National Institute of Technology Rourkela in 2007 as Assistant Professor and is currently working as Associate Professor. His prime areas of teaching and research include Fluid flow, Fluidization Engineering, Process Control and Environmental Engineering. Dr. Jena has published 54 journals, 51 conference papers, and 2 book chapters. He has supervised many B.Tech., M.Tech., M.Tech (Research) and PhD dissertations.

## WHO CAN ATTEND?

- Students (undergraduate, graduate, and Ph.D), postdocs and scientists/faculty members from academic and technical institutions.
- Researchers and engineers from R&D laboratories and industries.

## COURSE REGISTRATION

Category	Registration Fee	
	Offline*	Online**
Research Scholars / PG/ UG students	₹ 1180.00	₹ 708.00
Faculty/ Researchers from Academic/ Research Institutions	₹ 2360.00	₹ 1180.00
Participants from Industry	₹ 5900.00	₹ 2360.00
Participants from abroad	\$ 354.00	\$ 118.00

\* Additional charges for accommodation and food for offline registration.

\*\* No accommodation & food for online registration

\*\*\* No Registration fee for NIT Rourkela students

## SPONSORSHIP

### Event Sponsorship:

- Golden Sponsor - ₹ 1,00,000 (1-page advertisement + 2 Participants)**
- Silver Sponsor - ₹ 75,000 (1-page advertisement +1 Participant)**
- Bronze Sponsor - ₹ 50,000 (1-page advertisement)**
- Others (One Day Lecture +1 Participant) - Rs.50000/-**

## MODE OF PAYMENT

All payments are to be made through Cheque/NEFT/Demand Draft, drawn in favor of “**Continuing Education, NIT Rourkela**” payable at **SBI, NIT campus branch, Rourkela (Code-2109 )** before the last date of registration.

### Bank Details:

**Name of Beneficiary: Continuing Education, NIT Rourkela**

**Name of Bank: State Bank of India**

**A/c No: 10138951784**

**IFSC Code: SBIN0002109**

**MICR CODE:- 769002109**

or

**UPI ID: 01389517841@sbi**

The registration fee includes kit, certificate, lunch & tea. No refund of registration fee will be made. Only certificate will be provided to online participants. Accommodation is available in the campus on payment basis. No TA/DA will be paid.

## BOARDING AND LODGING

Accommodation on twin share basis can be arranged in the institute guest houses subject to availability and on prior payment.

Room tariff (May change without notice).

**South Block : Twin sharing per person per day: Rs.1200/-**

**North Block : Twin sharing per person per day: Rs.750/-**

Breakfast and dinner can be availed in the guest house/student Hostels on payment. There are also many good hotels in Rourkela; the same can be booked on request and prior payment.

## CONTACT DETAILS

### Course Coordinator

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### Local GIAN Coordinator

**Prof. Shishir Kumar Sahu**

Professor, HAG  
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GIAN COURSE ON

## Application of Fluidized Bed Technology for a Sustainable Environment

January 20-24, 2025

REGISTRATION FORM

*for participation*

•Name(Dr/Mr/Mrs/Miss) .....

•Date of Birth: .....

•Nationality: .....

•Organization (full name): .....

•Designation: .....

•Area of Interest: .....

•How will this course be useful to you?  
.....  
.....

•Contact details:

Phone Number: .....

Email ID: .....

•Registration fee details

Cheque/ NEFT/ DD number/ Transaction ID:  
.....  
.....

Bank Name: .....

Date and amount: .....

•Is accommodation required?  
Yes/No

From ...../01/2025 till ...../01/2025.

Date: \_\_\_\_\_ Signature: \_\_\_\_\_

Please email the registration form to the course coordinator.

or

### ONLINE REGISTRATION FORM LINK:

[https://docs.google.com/forms/d/e/1FAIpQLSd390jDEMR7zxK\\_s5FErOmJvY7jkH9H-q0ZXXI5C1XwociCvg/viewform?usp=preview](https://docs.google.com/forms/d/e/1FAIpQLSd390jDEMR7zxK_s5FErOmJvY7jkH9H-q0ZXXI5C1XwociCvg/viewform?usp=preview)