# **About NITK Surathkal**

Since its inception in 1960, the National Institute of Technology Karnataka (NITK), Surathkal has established itself as a premier Institution engaged in imparting quality technological education and providing support to research and development activities. NITK is conferred the status of an Institution of National Importance vide NIT Act No.29 of 2007 by Govt. of India and is consistently ranked as one of the top ten technical institutions in India. Presently, NITK offers 9 Bachelors, 28 Master's and Doctoral Degree programs. The institute is located 22 kilometers north of Mangalore City along the Kanyakumari - Mumbai National Highway-66, amid 300 acres of sylvan surrounding with the picturesque Western Ghats on the east and sun-kissed sands of the Arabian Sea to the west. NITK is committed to enhance capabilities and potential of our human resources with the objective of transforming them into leaders in their chosen areas of interest. Our vision is to strive for excellence, be globally competitive in technical education and focus on knowledge assimilation, generation and dissemination.

## **About Chemical Engineering Department**

The Department of Chemical Engineering in National Institute of Technology Karnataka, Surathkal was started in the year 1965 with Professor M G Subba Rau as its Founder Head of the Department. With his practical and innovative mind Professor Rau laid a solid foundation to build a very good department to make competent professionals graduating from the institution. A well balanced curriculum having both theory and practice, good infrastructure, well qualified and friendly faculty have been the hall mark of the department right from its inception.

## Who should attend?

The training program is aimed to attract and bring together Faculty Members, Research Scholars and UG/PG students from Academic & Research Institutions and Engineers from Industries in the field of Chemical/Mechanical and other interdisciplinary branches.

### No. of Participants - 50

## **Registration fee**

Students/ Research	₹ 1000 + 18% GST
Scholars	<b>= ₹ 1180</b>
Faculty	₹ 2000 + 18% GST <b>= ₹ 2360</b>
Industry/ Research	₹ 3000 + 18% GST
Organization	<b>= ₹ 3540</b>

## **Payment Details:**

Draw a DD in favor of "**TEQIP III NITK SURATHKAL**" <u>For Online Transfer (NEFT)</u>: Account No: 36857214150 IFSC Code: SBIN0002273 A/C Type: Current Bank Account Branch: SBI Surathkal (NITK Campus) **Important Dates:** 

Last date for receipt of completed registration form along with payment details (DD/NEFT) by post/online is **December 20<sup>th</sup>**, **2018**.

## **Correspondence:**

Dr. B Ashraf Ali Department of Chemical Engineering NITK Surathkal, P.O. Srinivasnagar Mangaluru – 575025 Mobile: 9347112487 Email Id: ms3ms2k19.nitk@gmail.com Website: ms3ms2k19.wixsite.com/website Five Days Short Term Training Program (STTP)

On

Modelling & Simulation of Micro and Macro Multiphase Systems

# (MS3MS - 2019)

8th - 12th January, 2019

Under

**TEQIP - III** 

# Coordinators

# Dr. B Ashraf Ali Dr. Chinta Sankar Rao



Organized by Department of Chemical Engineering





National Institute of Technology Karnataka, Surathkal

Mangalore - 575025

# **Overview**

Across all industries process optimization, energy usage, emission reduction, safety and new product innovation drive advanced engineering and technology development. Computational Fluid dynamics (CFD) and ASPEN are two such engineering tools that fulfil these requirements.

CFD integrates theoretical and experimental fluid dynamics. Every important aspect in the physics of micro and macro systems is captured by applying elegantly constructed mathematical equations. ASPEN provides interactive workflows to develop plant wide simulation solution. The insights yield better understanding of plant operation thus saving time and money in new product development.

This workshop will give an overview of modelling and simulation in chemical engineering, fundamentals of CFD with hands-on training in ANSYS and ASPEN. This program will be useful for UG, PG students, research scholars and industry personnel.

#### **Resource Persons**

### Academia

- 1. Prof. S Pushpavanam, IIT Madras
- 2. Prof. M Chidambaram, IIT Madras
- 3. Prof. S Vengadesan, IIT Madras
- 4. Prof. Tanmay Basak, IIT Madras
- 5. Prof. Gargi Das, IIT Kharagpur
- 6. Dr. T Renganathan, IIT Madras
- 7. Dr. Jason Picardo, ICTS Bengaluru
- 8. Dr. Chandrasekhar B, NIT Calicut

# Industry

- 1. MRPL, Mangaluru
- 2. Shell Technology Centre, Bengaluru
- 3. Mr. Priyant S, Innovent Engg Sol Pvt Ltd, Bengaluru
- 4. Mr. Ganapati K, Josts Engg. Company Ltd, Pune

# Topics to be covered

- Overview of modelling and simulation in chemical engineering
- > Fundamentals of CFD & its turbulence modelling
- > CFD modelling of micro reactors
- Flow visualization techniques in micro and macro multiphase systems
- > Fundamentals of FEM and its applications
- Experimental and theoretical investigation of flow behavior in reduced dimension systems
- > Population balance modelling in multiphase systems
- > Fluid flow pattern: from thin films to turbulence
- Identification of process model
- Process plant optimization and economic evaluation using ASPEN HYSYS
- Application of process simulators in chemical engineering process design

### Accommodation

Boarding, lodging and travel expenses shall be borne by the participants. Limited accommodations are available in the Institute Guest House/Hostel on first come first served basis on payment. Several good hotels are also available in and round Surathkal and Mangalore. Participants may contact the coordinator(s) for accommodation in Hostels.

### How to reach NITK

The Institute is located 22 kilometers north of Mangalore City on the NH-66. Surathkal, on the Konkan Railway (linking Mumbai to Mangalore), is the nearest rail station and is a stopover for most trains passing through Konkan Railway. While Surathkal and Mangalore Junction (Kankanady) are the closest alighting points for visitors coming by train from the North; Mangalore Central is the Terminus for many trains from South India. The Mangalore airport is just 20 km from the campus. After alighting at Mangalore Central the participants can take express buses plying up to Udupi which pass through NITK Campus on NH 66.

# **Registration Form**

Five Days Short Term Training Program (STTP) on

Modelling & Simulation of Micro and Macro



Name:	
Category: Student/ Faculty/ Industry	
Name of the institute/organization & address:	
Highest Academic Oualification:	
Field of Specialization:	
Address for correspondence	
nui ess foi correspondence.	
Email Id:	
Mobile No:	
DD No/Transaction No, Amount & Date:	

Accommodation Required: Yes/No

#### Date

#### **Signature**

<u>Important Note:</u> Please mention on the top of the envelope – STTP on Modelling & Simulation of Micro and Macro Multiphase Systems 2019.

Registration can also be done online in the website: ms3ms2k19.wixsite.com/website