

## Overview of the Course

21st century has evolved to be an era of rapid industrialization. Whilst the industry plays a positive role in everyone's day-to-day life, in many ways, industrialization is also negatively impacting our world today. Hence, a precise understanding about the environment and their response towards the industrial pollution is highly necessary. The academic, scientific and industrial community has to be exposed to the complexities of this topic so that they understand the seriousness of the issues and think of feasible advanced solutions for the various issues. In addition to that, the application of software and popular packages for solving numerical problems related to environment is highly important for the scientific community to render quicker solutions.

The course shall deal with various advanced models such as Mass balance, UNMIX model, positive matrix factorization model and Holistic approach system models and so on. The course would handle computer based solutions for various environmental problems. The course faculties have experience and demonstrable ability in teaching, research, and training in the field of chemical and environmental engineering.

### Course Content:

- Basic chemical thermodynamics and fugacity models for multimedia environmental transport.
- Property estimation methods for multimedia fugacity models
- Chemical kinetics fundamentals for multimedia transport processes.
- Applications of kinetics models for multimedia transport.
- Selected applications of multimedia transport in (a) air pollution, (b) sediment pollution (c) deep sea oil and gas exploration (e.g. BP disaster).

**Prof. Kalliat. T. Valsaraj** is the Charles and Hilda Roddey distinguished professor and the Ike East Professor in Chemical engineering in the Cain Department of Chemical engineering at Louisiana State University in Baton Rouge, Louisiana. He is currently the Vice President for Research and Economic Development at the Louisiana State University Baton Rouge, LA. He received his PhD in



Physical Chemistry from Vanderbilt University, Nashville, TN in 1989. His research encompasses various areas of environmental, chemical and material engineering. He is the author of 198 peer-reviewed journal articles, 5 books, 28 book chapters, 49 reports and monographs and 2 patents. He is a fellow of the American Institute of Chemical Engineers, the American Association for the Advancement of Science, and the National Academy of Inventors. He is also a member of the American Chemical Society, the American Association for the Advancement of Science, the American Society for Engineering Education, The Association of Environmental Engineering and Science Professors, Sigma Xi, The Air and Water Management Association, and The Society for Environmental Toxicology and Chemistry. He serves on the editorial review board of several journals.

### Who can participate?

This program is open to the Faculty, Scientists, UG, PG and Research Scholars of all Engineering/Science streams from various Institutes by paying fees at discounted rates. Practicing Engineers from industries can also participate.

### How to Register?

#### Stage-1: Web Portal Registration:

Visit <http://www.gian.iitkgp.ac.in/GREGN/index> and create login User ID and Password. Fill up the blank registration form and do web registration by paying Rs. 500/- online through Net Banking/Debit/Credit card as per instructions given there in. This provides the user with lifetime registration to enroll in any number of GIAN courses offered.

#### Stage-2: Course Registration:

Login to the GIAN portal again with the user ID and Password already created in Step 1. Click on Course Registration option at the top of Registration form. Select the Course titled "Multidimensional Engineering Approaches for resolving complex Environmental Issues" from the list and click on save option. Confirm your registration by clicking on Confirm Course.

#### Registration fee:

Faculty / Scientists	Rs. 3,000 /-
Participants from Industry	Rs. 10,000 /-
Students & Research Scholars	Rs. 2,000 /-
• With award of grade	Rs. 1,000 /-
• Without award of grade	
Students from abroad	US \$ 150 /-

The Registration fee includes instructional materials, tutorials, laboratory and computer use and free internet facility, refreshment and working lunch. Accommodation for outstation participants will be charged separately. No TA/DA will be paid for any participants.

#### Selection and Mode of Payment

Selected candidates will be intimated through e-mail. They have to remit the necessary course fee to the Bank as per the details given below. **Outstation participants requiring accommodation and Boarding facilities have to pay Rs. 3000/- for faculties and Rs.1500/- for students in addition to the course fee.**

Account Name	DIRECTOR NIT CALICUT
Account No.	35909407299
Bank	State Bank of India
Branch	CREC, Chathamangalam, Kozhikode
Branch Code	002207
IFSC	SBIN0002207
MICR Code	673002012
SWIFT Code	SBINPN BB392

Candidates registering early will be given preference in the short listing process. For any queries, please contact the host faculty.

## About GIAN Course

MHRD, Govt. of India has launched an innovative program titled “Global Initiative of Academic Networks (GIAN)” in higher Education, in order to garner the best international experience. As part of this, internationally renowned Academicians and Scientists are invited to augment the Country’s academic resources, accelerate the pace of quality reforms and elevate India’s scientific and technological capacity to global excellence.

## About the Institute

Set in a picturesque landscape at the foothills of the Western Ghats, National Institute of Technology Calicut (NITC) is located about 22 kilometers north-east of Calicut City. The institute is a Higher

Technical Institution of national importance set up by the NITSER Act 2007. The



institution runs on non-profitable basis and is fully funded by the Government of India under the Ministry of HRD. It offers 10 U.G., 30 P.G. and Ph.D. programs in various disciplines.

URL: [www.nitc.ac.in](http://www.nitc.ac.in)

## About the Department

The Department of Chemical Engineering was established in the year 2006. The Department offers B.Tech in Chemical Engineering, M.Tech in Chemical Engineering and Ph.D. programs in Chemical Engineering & Technology and allied areas. Currently, the Department has nine fulltime regular faculties with different research expertise. Faculty takes up many sponsored projects and consultancy and also institution development activities.

## Host Faculty

**Dr. N. Selvaraju** is a recipient of Kerala State Young Scientist Award an elite award of the state awarded by the Kerala State Council for Science, Technology and Environment (KSCSTE) for the year 2014. He is also the recipient of prestigious Fast Track Young Scientist project by DST (Department of Science



and Technology), New Delhi. He is currently working as an Assistant Professor in Department of Chemical Engineering, National Institute of Technology Calicut. Dr. N. Selvaraju’s research encompasses various areas of chemical and environmental engineering, particularly expertise on Microfluidics and Micro Reactors, Adsorption in Waste water treatment, Air and Water Quality models, Nonlinear Dynamic Control systems and Biodiesel. He is a very dynamic researcher and is currently carrying out several research activities funded by Kerala State Council for Science, Technology and Environment and Department of Science and Technology. He has published more than 40 articles in reputed SCI indexed journals in the past 3 years alone. He has been actively engaged as a reviewer for over 28 SCI indexed international journals.

## Contact Details

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A Five Day

GIAN Course on

**Multidimensional Engineering Approaches for resolving complex Environmental Issues**

**December 19-23, 2016**

**Call for Registration and Participation**

**International Faculty**

**Prof. Kalliat. T. Valsaraj**

Professor in Chemical Engineering  
Louisiana State University, LA, USA

**Host Faculty**

**Dr. N. Selvaraju**

Department of Chemical Engineering,  
National Institute of Technology Calicut,  
Kozhikode, Kerala, India

**GIAN Local Coordinator**

**Dr. Abraham T Mathew**

Dean Research & Consultancy  
National Institute of Technology Calicut,  
Kozhikode, Kerala, India



# Multidimensional Engineering Approaches for resolving complex Environmental Issues



December 19-23, 2016

Department of Chemical Engineering

National Institute of Technology Calicut

Kozhikode, Kerala, India -673 601

An International 5 day course, as per MHRD Scheme

“Global Initiative of Academic Network (GIAN)”

## **REGISTRATION FORM**

Name (Block Letters): .....

M/F: .....

Designation/Professional Title: .....

Organization: .....

Address:.....

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Tel.....Mobile. .... Email.....

Application ID (Generated during One-time registration at GIAN portal of IIT Kharagpur):

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Course Fee: Covers only course materials without boarding and lodging

Students/Research Scholars: Rs. 2000/-(With award of grade)

Rs. 1000/- (Without award of grade)

Faculty/Scientists: Rs. 3000/-

Participants from Industry: Rs. 10,000/-

Participants from abroad: US\$150/-

\*Accommodation is available in Institute Guest House/Hostels on request against the advance payment on first come and first serve basis.

Accommodation Required: Yes/ No

If accommodation required, then Additional Charges for desired accommodation:

- Rs 1500 for Students.
- Rs 3000 for Faculty (Guest House-Twin Sharing Basis).
- Food on actual basis.

Payment may be made through:

1. Demand Draft: In favour of “DIRECTOR NIT CALICUT” payable at Calicut.

DD /Cheque No: .....

Date: ....., Amount: .....

Bank: .....

**OR**

2. National Electronic Funds Transfer (NEFT) to the account “DIRECTOR NIT CALICUT” (Account Number 35909407299) Bank: State Bank of India, IFSC Code: SBIN0002207, Swift Code: SBINPN BB392

Date: .....

Signature of Candidate

**APPROVAL FROM AFFILIATED INSTITUTE OF CANDIDATE**

The applicant will be permitted to attend the above Course, if selected.

Date: .....

Signature and Seal of approving Authority