

Overview of the Course

The pharmaceutical, biotechnological, food, microelectronics, fine and bulk chemical industries are currently challenged by the need to comply with more stringent product requirements, a fast changing market and the need for reduction of energy demand and production costs. This applies particularly to the production of crystalline products, which is one of the most important economic activities in these industries. To meet these needs the industry requires crystallization processes which are flexible, easy to scale up, and energy & cost efficient. The production of more than 70% of all solid products involves at least one crystallization as a key processing step, which can have a significant effect on the overall performance of the entire production process and the properties of the final product. Hence, there is a strong incentive to design crystallization as an integrated, intensified and intelligent process, which can automatically react and adapt to changing operating conditions to guarantee the sustainable production of consistent high quality solids. Crystallization is recognized as one of the key unit operations in the fine and pharmaceutical industries.

Course Contents:

The main objective of the proposed course is to provide an introduction to advanced concepts of crystallization process engineering including crystallization mechanisms, multicomponent crystallization and crystallization in impure media, as well as population balance modeling, model-based dynamic optimization and control, process analytical technology (PAT) and chemometrics & quality-by-design techniques.

The course will introduce participants the approaches & tools for the mathematical modeling & control of crystallization systems and will provide hands on experience with simulation software and model-based crystallization design and optimization.



Prof. Zoltan K Nagy, Professor, School of Chemical Engineering, Purdue University, USA is the international resource person. He has over 20 years of experience in advanced process control, process analytical technologies and crystallization modeling & control approaches with applications in the pharmaceutical, food and fine chemical industries. His current research focuses on the application of systems approaches & tools in the design & robust control of batch & continuous crystallization systems. He has authored more than 120 archival journal papers and the co-author of 4 books. He graduated 15 PhD students and currently supervises or co-supervises 20 in the UK and Purdue. For more details: <https://engineering.purdue.edu/ChE/people/ptProfile?id=79574>



Prof. Ravindra Gudi, Professor, Department of Chemical Engineering, IIT Bombay, is the national resource person. He guided 14 doctoral students and published 60 articles in refereed journals, 70 in peer-reviewed international conferences. He has 7 international patents filed. His research interests include Process Systems Engineering, – modeling, data reconciliation, optimization, scheduling and decision support, system identification, control and fault detection and diagnosis. For more details:

<http://www.che.iitb.ac.in/online/faculty/ravindra-d-gudi>

Who can Participate?

This program is open to the Faculty, PG and Research students of Chemical and other relevant Engineering from various Institutes. Practicing Engineers from industries and research scientists from research labs can also participate.

How to Register?

Stage-1: Web Portal Registration:

Visit <http://www.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. This provides the user with life time registration to enroll in any number of GIAN courses offered.

Stage-2: Course Registration:

Login to the GIAN portal 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 “**Crystallization Systems Engineering**” from the list and click on Save option. Confirm your registration by clicking on Confirm Course.

Registration Fee:

Faculty	Rs. 4,000/-
Participants from Industry /Research Organizations	Rs. 10,000/-
Students & Research Scholars	
• Without award of Grade	Rs. 1,000/-
• With award of Grade	Rs. 2,000/-
Students from abroad	\$ 300

The Registration fee includes instructional materials, tutorials, laboratory and computer use and free internet facility. The participants from academic/research institutes and Industry will be provided with boarding and lodging on additional payment of Rs. 4,000/- in Visitors Block on sharing basis. Students & Research Scholars will be provided with boarding and lodging in Institute Hostels on additional payment of Rs. 2,000/-.

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. 4,000/- in addition to the course fee.

Account Name	GIAN NITW
Account No.	62447453600
Bank	State Bank of Hyderabad
Branch	REC Warangal (NIT Campus)
Branch Code	20149
IFSC	SBHY0020149
MICR Code	506004011
SWIFT Code	SBHYINBB018

Candidates registering early will be given preference in short listing process

For any queries regarding registration of the course, please contact the National Coordinators:

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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 and Warangal

National Institute of Technology, Warangal (NITW) formerly known as RECW is the first among seventeen RECs set up in 1959. Over the years, the Institute has established itself as a premier Institution in imparting technical education of a very high standard, leading to B.Tech, M.Tech and Ph.D. programmes in various specializations of Science and Engineering streams. Warangal is known for its rich historical and cultural heritage. It is situated at a distance of 140 km from Hyderabad. Warangal is well connected by rail and road. National Institute of Technology, Warangal campus is 2 km away from Kazipet railway station and 12 km away from Warangal railway station.

About the Department

The Department of Chemical Engineering was established in the year 1964 and celebrated Golden Jubilee year in 2014. The Department offers B.Tech in Chemical Engineering, two M.Tech programmes (each in Chemical Engineering and Process Control) and Ph.D programs. Currently, the Department has 16 faculty members with different research expertise. The Department has good research facilities for both experimental as well as simulation based research.



A Five Day

GIAN Course on

Crystallization Systems Engineering

September 5 - 9, 2016

Call for Registration and Participation

Resource Persons

Prof. Zoltan K. Nagy

School of Chemical Engineering

Purdue University, USA

Prof. Ravindra Gudi

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IIT Bombay, India

National Coordinators

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