



# Chemical Engineering Department

Jadavpur University

KOLKATA-700032

Five Day Short Term Course (Sponsored by TEQIP III)

On

## Recent Refinery Practices

*June 04-08, 2018*

### INTRODUCTION TO THE COURSE

Even with the advent of various non-conventional and renewable energy sources the fossil fuels are and going to be the prime energy source globally in near and foreseeable future. The liquid and gaseous hydrocarbons are most favored energy source owing to their convenience in handling and efficiency in utilization. The energy requirements of the transport sector are virtually totally met by the liquid fuels obtained as the products of crude processing in refineries. Pollution is a term that goes hand in hand with the use of fossil fuels. The need of the hour is to keep a hawk's eye on to the reduction of pollution levels in crude processing and at the same time producing fuels which can be utilized with the generation of minimum pollution.

It is often said that any industry can never remain stagnant, either it will flourish or it will cease to exist. Likewise in the hydrocarbon industry, newer technologies are infused regularly to replace the inefficient and obsolete technologies to keep updated with the global advancements.

The present Short-Term Course will try to highlight some of the latest technologies introduced in the refineries to produce the latest Euro or Bharat stage fuels and other petroleum products which will meet the stringent specifications of the Pollution Control Board. Experts from the hydrocarbon industries will be sharing their experience and views of the modern practices adopted in the industry.

## **SPECIFIC OBJECTIVES**

**To acquaint and familiarize the participants with:**

- **Modern refinery practices**
- **Existing and emerging technologies adopted**
- **Identification of specific energy efficiency opportunities both in processes and utilities**
- **Emergence of green field refineries coming up in near future**
- **Key challenges faced by Indian refiners in the journey to BS VI upgradation**
- **Future of the refining industry with the arrival of battery operated electric cars**
- **Challenges for the future refinery in the production of cleaner and higher performance transportation fuels from increasingly heavier and more sour crude supply**
- **Scope and opportunities of using synthetic crude oil from oil sands in Canada and shale gas liquid by-products which are lighter than the conventional crude oils and hence its use as blending components to dilute the heavy crudes**
- **Development of the concept of ‘refinery-cum-petrochemicals complex’**

# COURSE OUTLINE

TOPIC	DESCRIPTION
<b>Refinery practices</b>	Present refining practices with a brief overview of enhanced oil recovery, gas hydrates, shale oil and gas, deep and ultra-deep sea water drilling; Alkylation and isomerization for high octane gasoline blending stock; Troubleshooting; Revamping (Case Studies)
<b>Energy conservation measures</b>	Use of variable-speed drive in cooling tower fan, use of pre-flash tower to operate ADU at lower pressure, use of pressure powered pumps instead of steam traps
<b>Emerging technologies</b>	Use of soaker visbreaking instead of coil visbreaking, ebullated bed resid hydrocracking, slurry hydrocracking, iso-dewaxing to reduce pour point whilst retaining viscosity index, concept of zero flaring system etc.; Biodiesel & Green Diesel; Green Aviation Turbine Fuel; Bioethanol and Biobutanol as gasoline blending stock

## COORDINATOR AND RESOURCE PERSON

The course co-ordinators Prof. Rajat Chakraborty and P.K. Banerjee are presently working as faculty member at the Chemical Engineering Department, Jadavpur University. Resource Persons for the course will comprise of eminent experts from the industry / academia with expertise in modern refinery practices.

## ELIGIBILITY

The course is open to faculty and scholars of recognized technical institutions and interested field / practicing engineers from industries. Applications will be considered under the following two categories:

- Category -I: Faculty members from the TEQIP III mentee institution (RTU, Kota, Rajasthan).
- Category -II: Faculty members and scholars from recognized technical institutions and professionals from industry (the participants will be selected on "First-Come-First-Served" basis out of the eligible applicants).

## REGISTRATION

The interested and eligible candidates may send their application in the attached "Registration Form", to the course coordinators (through email) positively by **May 22<sup>nd</sup>, 2018**. Category-I participants will be provided boarding and lodging in one of the guest houses of the university subject to availability. Travel expenses for Category-I participants will be borne by the home institute of the participants. No TA/DA will be admissible for Category-II participants. A certificate of participation will be issued to all participants. There is no fee for the course. Out of total 16 participants, 25% of the seats will be reserved for participants from Category-I.

## CONTACT DETAILS

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**P.K. Banerjee**      **Ph.No. 9433069950**      **Email: peekaybeeju@yahoo.co.in**



**CHEMICAL ENGINEERING DEPARTMENT**  
**JADAVPUR UNIVERSITY**  
**KOLKATA-700032, WEST BENGAL, INDIA**

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On

**Recent Refinery Practices**  
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**REGISTRATION FORM**

<b>NAME</b> [Block letters; as appearing on your Institution or official ID]							
<b>DESIGNATION</b>							
<b>INSTITUTION/ ORGANIZATION NAME</b>							
<b>INSTITUTION/ ORGANIZATION ADDRESS</b>							
				PIN CODE			
<b>ACADEMIC QUALIFICATION</b>		B. Tech		M. Tech		Ph. D.	
<b>GENDER</b>		FEMALE		MALE			
<b>ADDRESS FOR CORRESPONDENCE</b>							
				PIN CODE			
<b>MOBILE (COMPULSORY)</b>							
<b>EMAIL (COMPULSORY)</b>							
<b>CATEGORY (please tick)</b>		I		II			

\_\_\_\_\_  
SIGNATURE OF THE PARTICIPANT (with date)

Note: Participants will have to provide a bonafide certificate or ID card photocopy at the time of registration

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Signature of the Head of the Institute/Organization with seal