# *3rd Excellence in Hydrocarbon Processing Conference*

***19 - 23 September 2011***

***Kuala Lumpur, Malaysia***

KLM Technology Group

PRACTICAL ENGINEERING SOLUTIONS

**KLM Technology Group is a technical consultancy group, providing specialized services, training and equipment to improve process plant operational efficiency, profitability and safety. KLM Technology Group is recognized world-wide as a leader in the areas of distillation simulation, column design and unit commissioning with one of the best track records in the industry.**

# Our Profile

OPERATION TRAINING

Over the past five years KLM Technology Group has trained over 700 personnel from companies around the world

## Our Programs

| Instructor | 19 - 21 September 2011<br>Session One | 21 - 23 September 2011<br>Session Two |
|---|---|---|
| Ian Buttridge | Introduction to Distillation Operation, Control and Troubleshooting for Operations and Engineering Personnel | Advanced Distillation Operation, Control, Design and Troubleshooting for Operations and Engineering Personnel |
| Helmilus Moesa | Chemical Engineering for Non Chemical Engineers | Optimizing Ammonia and Fertilizer Plant Unit Operations |
| Karl Kolmetz | Introduction to Relief Valves and Flaring Systems | Advanced Relief Valves and Flaring Systems with a special Flare Tutorial by Callidus |
| Omar Majid | Guide Lines for Safe Commissioning of Process Units | Distillation Operation, Control and Troubleshooting for Operators |
| Dr. Swami (Sam) Narayanan | Improving the Performance and Reliability of Fired Heaters | Advances in Ethylene Pyrolysis Furnace Design, Operation and Optimization |

# Improving the Performance and Reliability of Fired Heaters

**19-21 September 2011**

**Course Overview**

This seminar focuses on the core building blocks of the fired heater systems, equipment and economics. This program will emphasize fired heater unit operation fundamentals, safe utilization of these fundamentals by operations and maintenance personnel, and equipment troubleshooting techniques.

**Course Outline**

- Introduction
- Fundamentals of Petroleum Chemistry
- Introduction to Process Equipments
- Introduction to Fired Heaters
- Fired Heater Engineering
- Introduction to Refinery & Olefins Fired Heaters
- Introduction to VCM Fired Heaters
- Improve the Efficiency of Fired Heaters
- Introduction to Fired Heaters Control & Boilers
- Fired Heater Safety
- Review of Process Incidents
- Revamping Fired Heaters
- Reducing NOx Emissions
- Conclusions

**Who Should Attend**

- People who are making day to day decisions regarding operation, design, and economics of processing plants.
- Ideal for veterans and those with only a few years of experience who want to review or broaden their understanding in Processing Plant Operations.
- Other professionals who desire a better understanding of subject matter.

**What you can expect to gain**

- An detailed overview of furnace operations, processes and economics.
- Gain an understanding of the equipment of a process furnaces and how they can be optimized.
- Gain an understanding of the refinery, Olefin and VCM furnace.

# Advances in Ethylene Pyrolysis Furnace Design, Operation and Optimization

**21-23 September 2011**

**Course Overview**

This program will emphasize fired heater unit operation fundamentals, safe utilization of these fundamentals by operations and maintenance personnel, and equipment troubleshooting techniques..

**Course Outline**

- Introduction
- Review of Process Incidents
- Fundamentals of Petroleum Chemistry
- Introduction to Process Equipment
- Introduction to Fired Heater
- Fired Heater Engineering
- Improve the Efficiency of Fired Heaters
- Introduction to Fired Heater Control & Boilers
- Fired Heater Safety
- Revamping Fired Heaters
- Reducing NOx Emissions
- Ethylene Furnace Technology
- Conclusions

**Who Should Attend**

- People who are making day to day decisions regarding operation, design, and economics of processing plants.
- Ideal for veterans & those with only a few years of experience who want to review or broaden their understanding in Processing Plant Operations.
- Other professionals who desire a better understanding of subject matter.

**What you can expect to gain**

- An detailed overview of furnace operations, processes and economics.
- Gain an understanding of the equipment of a process furnace.
- Gain an understanding of the Olefin furnace.



## Instructor's Profile

Dr. Swami (Sam) Narayanan

**Dr. Swami (Sam) Narayanan** has over twenty-five years of detailed experience in the design, construction, commissioning, and operations management of process units from India, Europe, North America and South East Asia. He has a strong background in the manufacturing of a wide variety of chemical process technologies in the Ethylene Olefin Industry.

Dr. Naraynan is an industry specialist in Olefin Pyrolysis Furnaces including hands on design, commissioning and trouble shooting of over 14 units. He has seven US Patents dealing with Ethylene Pyrolysis Furnaces. His experience includes over twenty years of direct Pyrolysis Experience with KTI, Stone & Webster, and Kellogg Brown & Root. Nine years of furnace and plant optimization experience with Furnace Technology Consulting Services and the Westlake Group.

Dr. Sam has a PhD in Chemical Engineering from the Indian Institute of Technology and Post Doctoral work in Chemical Engineering at Technical University of Delft, Delft, Netherlands. He is a member of the American Institute of Chemical Engineers and lives in Texas.

# Introduction to Distillation Operation, Control and Troubleshooting for Operations and Engineering Personnel

**19-21 September 2011**

**Course Overview**

This course will guide the participates to develop key concepts and techniques to design, operate and troubleshoot a distillation system. These key concepts can be utilized to make design and operating decisions.

**Course Outline**

- General Column Design
- Tray Column Design and Operation
- Packed Column Design and Operation
- Operating Columns in Fouling Service
- Operating Columns in Vacuum Service
- Guidelines for Improved Columns Operation and Maintenance
- Distillation Column Control
- Typical Controlled and Manipulated Process Variables
- Commissioning
- Troubleshooting

**Who Should Attend**

- An engineer or chemist who must troubleshoot and solve distillation problems in a plant, an engineering office or laboratory.
- Technical engineers, operation engineers, process support personnel, chemist and manager.
- Ideal for veterans and those with only a few years of experience who want to review or broaden their understanding of process safety.

**What you can expect to gain**

- The operation, control and trouble shooting of a distillation columns and it's associated equipment.
- An understanding of essential concepts.
- Valuable practical insight for trouble free design and field proven techniques for commissioning, start up and shutdown of distillation operation.
- The fundamental knowledge of distillation control.
- To tailor your approach to specific design, analysis and trouble shooting problems

# Advanced Distillation Operation, Control, Design and Troubleshooting

**21-23 September 2011**

**Course Overview**

This course will guide the participates to develop key concepts and techniques to design, operate and troubleshoot a distillation system. These key concepts can be utilized to make design and operating decisions.

**Course Outline**

- General Column Design
- Vapour Liquid Equilibrium
- Stages and Transfer Units Efficiencies
- Stage Efficiency
- Tray Column Design
- Packed Column Design
- Designing Columns for Fouling Service
- Designing Columns for Vacuum Service
- Designing Columns for Improved Operation and Maintenance
- Distillation Column Control
- Typical Controlled and Manipulated Process Variables
- Controller Performance Criteria
- Feed Forward Control of An Ideal Process
- Troubleshooting
- Commissioning

**Who Should Attend**

- An engineer or chemist who must troubleshoot and solve distillation problems in a plant, an engineering office or laboratory.
- Technical engineers, operation engineers, process support personnel, chemist and manager.
- Ideal for veterans and those with only a few years of experience who want to review or broaden their understanding of process safety.

**What you can expect to gain**

- The operation, control and trouble shooting of a distillation columns and it's associated equipment.
- An understanding of essential concepts.
- Valuable practical insight for trouble free design and field proven techniques for commissioning, start up and shutdown of distillation operation.
- The fundamental knowledge of distillation control.
- To tailor your approach to specific design, analysis and trouble shooting problems



## Instructor's Profile

Ian Buttridge

**Ian Buttridge** has over fifteen years of wide ranging experience in the design and construction of processing unit operation in the hydrocarbon processing industry providing engineering solutions, process design, and equipment. In particular his experience has focused on refining and petrochemical applications with a specific specialization on distillation. Publications include authoring and co-authoring over 20 technical papers on a variety of subjects for product recovery, troubleshooting, training, project management, and process design with environmental concerns.

Mr. Buttridge began his career working for Glitsch in 1991 while a student at Texas A&M University. After graduating in Chemical Engineering, he continued working for Glitsch and later Koch-Glitsch until 2007, when he joined GTC Technology as a Technology Manager.

He has spent time troubleshooting, designing, and inspecting distillation equipment and processes throughout the world. Recently his work has focused on refinery Crude Units and Aromatics Separations, with a specific focus on distillation and energy efficiency.

# Chemical Engineering for Non Chemical Engineers

## 19-21 September 2011

### Course Overview

The seminar identifies the areas of chemical engineering that are most commonly encountered by the non-specialist, with examples that will be drawn from a range of process industries including oil and gas processing, petrochemicals, chemical manufacturing.

### Course Outline

- Introduction
- Review of Process Incidents
- Fundamentals of Chemistry
- Introduction to Unit Operations Equipment
- Introduction to Fluid Flow and Mixing
- Introduction to Process Control and Instrumentation
- Introduction to the Energy and Material Balance
- Introduction to Thermodynamics and Equilibrium
- Introduction to Reaction Engineering
- Introduction to Separation and Mass Transfer Operations
- Process Operations and Troubleshooting
- Introduction to Unit Operations Economics

### Who Should Attend

- This program has been designed for non-technical personnel assigned to positions in petroleum refineries, corporate offices, supplier and other interrelated companies.
- The content of the program is based upon the assumption that those in attendance do not have a formal education in engineering and chemistry and do not work in highly technical environments.
- The program should be used for newly-hired refinery plant personnel & may serve as a prerequisite for those who do not have a technical background but who want to attend the more detailed petroleum refining or chemical processing program.

### What you can expect to gain

- An overview of chemical engineering operations, safety, processes and economics.
- Become familiar with the equipment of a chemical engineer.
- Become familiar with the unit operations of chemical engineering.
- Become familiar with plant economics.

# Optimizing Ammonina and Fertilizer Plant Unit Operations

## 21-23 September 2011

### Course Overview

This seminar focuses on the core building blocks of the ammonia plant and fertilizer complex process systems, equipment and economics. This program will emphasize the ammonina process unit operation fundamentals, safe utilization of these fundamentals by operations, engineering, maintenance and support personnel.

### Course Outline

- Introduction
- Introduction to Ammonia plant Key Management Concepts to maximize profitability & sustainability
- Introduction to Key equipment in Ammonia Plant & how to optimize
- Overview of an Ammonia Plant
- Plant Reliability
- Quality
- Cost Control
- People Development

### Who Should Attend

- People who are making day to day decisions regarding operation, design, and economics of processing plants
- Ideal for veterans and those with only a few years of experience who want to review or broaden their understanding in Processing Plant Operations
- Other professionals who desire a better understanding of subject matter

### What you can expect to gain

- An detailed overview of Ammonia plant operations, processes and economics
- Gain an understanding of how to optimize equipment & system in an Ammonia plant
- Gain an understanding of the Ammonia plant flow sheets
- Gain an understanding of Ammonia chemistry and catalyst
- Gain an insight to optimization strategies



## Instructor's Profile — Helmilus Moesa

**Helmilus Moesa** has more than 23 years of progressive experience in the design, construction, commissioning, and operations management of process units.

He has a strong background in the manufacturing of a wide variety of chemical process technologies and product categories including; ammonia, olefin, and polymer catalytic reactions, distillation, solids handeling and steam & power plant operations. Mr. Moesa has substantial experience in the operation, design and troubleshooting of Ammonia , Olefin and Polymer Plants. His experience includes seven (7) years of Ammonia experience and sixteen (16) years of Olefin and Polymer experience. He has authored papers and spoke at technical conferences across Asia and North America.

He is a Chemical Engineer from Gadjah Mada University, Yogyakarta, Indonesia, and also has an Master Business Administration (MBA).

# Introduction to Relief Valves and Flaring Systems

## 19-21 September 2011

**Course Overview**

This course will guide the participates to develop key concepts and techniques for optimizing and designing pressure relieving and flaring systems.

**Course Outline**

- Introduction
- Review of Process Incidents
- Introduction to Flaring System Equipment
- Overview of a Flare Header
- Overview of a Pressure Relieve Valve
- Overview of a Flare Knock Out Drum
- Overview of a Flare
- Flare Safety Guidelines
- Environmental Aspects
- Process Equipment Troubleshooting

**Who Should Attend**

- People who are making day to day decisions regarding operation, design, and economics of processing plants
- Ideal for veterans and those with only a few years of experience who want to review or broaden their understanding in Processing Plant Operations.
- Other professionals who desire a better understanding of subject matter

**What you can expect to gain**

- An detailed overview of Flaring Systems operations, design processes and environmental concerns.
- Gain an understanding of the equipment of a Flaring System
- Gain an understanding of the design of these critical pieces of equipment
- Review safety guidelines of Flaring Systems
- Troubleshooting Techniques

# Advanced Training for Pressure Relieving and Flaring Systems

## 21-23 September 2011

**Course Overview**

This course will guide the participates to develop key concepts and techniques for optimizing and designing pressure relieving and flaring systems.

**Course Outline**

- Introduction
- Review of Process Incidents
- Introduction to Flaring System Equipment
- Overview of a Flare Header
- Overview of a Pressure Relieve Valve
- Overview of a Flare Knock Out Drum
- Overview of a Flare
- Flare Safety Guidelines
- Environmental Aspects
- Process Equipment Troubleshooting

**Who Should Attend**

- People who are making day to day decisions regarding operation, design, and economics of processing plants
- Ideal for veterans and those with only a few years of experience who want to review or broaden their understanding in Processing Plant Operations.
- Other professionals who desire a better understanding of subject matter

**What you can expect to gain**

- An detailed overview of Flaring Systems operations, design processes and environmental concerns.
- Gain an understanding of the equipment of a Flaring System
- Gain an understanding of the design of these critical pieces of equipment
- Review safety guidelines of Flaring Systems
- Troubleshooting Techniques



# Instructor's Profile

Karl Kolmetz

**Karl Kolmetz** has over twenty-five years of progressive experience in the design, construction, commissioning, and operations management of process units from the US Gulf Coast to Alaska through Asia. He has a strong background in the manufacturing of a wide variety of chemical process technologies and product categories.

His experience includes four years of Construction, two of which were on the Alaskan Pipeline with Fluor Daniel. Sixteen years (16) of Refining experience in the Charter / Phibro (now Valero) Refinery in Houston, Texas. One year of commissioning experience with Raytheon Badger Ethyl benzene / Styrene plants in Asia. Seven years (7) Ethylene experience: four years in Louisiana and three years in Malaysia with the Westlake / Titan Group. Four years (4) of distillation design experience as the Asia Pacific Technology Manager for Sulzer Chemtech, a specialty distillation company and General Manager for KLM Technology Group.

Karl is authoring a book on Process Plant Equipment Design. He has been nominated to a task force to help review Chemical Engineering Curriculum in Malaysia. He has a Bachelor of Science in Chemical Engineering from The University Of Houston.

# Guide Lines for Safe Commissioning of Process Units

**19-21 September 2011**

**Course Overview**

This seminar focuses on the core building blocks of the process unit equipment. This program will emphasize process unit equipment fundamentals, safe utilization of these fundamentals by operations and maintenance personnel, and equipment troubleshooting techniques. This program can be 3-5 days depending on the needs analysis of the participants.

**Course Outline**

- Introduction
- Review of Process Incidents
- Basics Process Equipment Review
- Review of Hazard Analysis Techniques
- Building Commissioning Guidelines
- Building Commissioning Plan
- Safe Equipment Isolation Guidelines
- Safe Equipment Isolation Labels Guidelines
- Safe Equipment Isolation Industry Standards
- Troubleshooting Guidelines
- Project Management Overview
- Conclusions

**Who Should Attend**

- People who are making day to day decisions regarding operation, design, and economics of processing plants.
- Ideal for veterans and those with only a few years of experience who want to review or broaden their understanding in Processing Plant Operations.
- Other professionals who desire a better understanding of subject

**What you can expect to gain**

- The Process Unit Equipment Fundamentals – how each system functions from a hands on viewpoint
- Safe commissioning and utilization of process equipment
- Safe de-commissioning of process equipment
- Hazard Analysis Techniques
- Safe Isolation Guidelines
- Project Management Guidelines

# Distillation Operations, Design and Troubleshooting for Operators

**21-23 September 2011**

**Course Overview**

Product recoveries, purities and energy utilization can be improved in most distillation systems. These principles need to be understood in advance of operating and trouble shooting a distillation column for the operator or problem solving to be effective.

**Course Outline**

- Introduction
- Distillation Equipment
- Tray Column Equipment
- Packed Column Equipment
- Process Control
- Distillation Column Control
- Typical controlled and manipulated process variables
- Commissioning
- Troubleshooting

**Who Should Attend**

- This course has been designed for operations personnel who may or may not have a technical degree. The course will review the fundamentals of design, but will focus more on the practical application of these fundamentals. Key distillation inspection, troubleshooting and commissioning guidelines will be reviewed.
- Ideal for veterans and those with only a few years of experience who want to review or broaden their understanding of distillation. This course would be a very practical overview for fresh graduate engineers.
- Other professionals who desire a better understanding of the subject matter.

**What you can expect to gain**

- The operation, control and trouble shooting of a distillation columns and it's associated equipment,
- An overview of distillation, practical solutions as well as theory
- An understating of essential distillation concepts,
- Valuable practical insights for trouble free design and field proven techniques for commissioning, start up and shutdown of distillation operation.
- The fundamental knowledge of distillation control.
- To tailor your approach to specific design, analysis and trouble shooting problems.



## Instructor's Profile ● Omar Majid

**Omar Majid** has over twenty years of process plant experience ranging from Oleo Chemicals, Refining, Olefins and Aromatics Units. He has a strong background in the manufacturing of a wide variety of chemical process technologies and product categories including; cryogenic liquids, ethylene, propylene, benzene & toluene extractive distillation, crude atmospheric & vacuum fractionation, Oleo chemicals, and steam & power plant operations. Job functions include laboratory technician, operator, board operator, operations supervisor, and operations trainer.

Experience includes four years of Oleo Chemical experience, nine (9) years of Refining experience as a laboratory technician and ten years (10) Ethylene and Aromatics experience as operations superintendent with the Titan Group in Malaysia.

Omar is a guest Lecture at Universit Teknologi Malaysia and has presented papers in conferences in Kula Lumpur. He currently lives in Malaysia.

# Who Should attend

- Plant Managers, Engineers, Chemists, Process Support Personnel and Non Technical Professionals.
- People who are making day to day decisions regarding operation, design, maintenance, and economics of process industry plants.
- Ideal for veterans and those with only a few years of experience who want to review or broaden their understanding of process unit.
- Other professionals who desire a better understanding of the subject matter.

***Yes !*** **I would like to register the following participants**

Name 1 .....
Job Title .....
Session Title .....

Name 2 .....
Job Title .....
Session Title .....

**Company Information**

Company .....
Address .....
.....
Town ..... State .....
Tel ..... Fax .....

**Authorized Signatory**

*(*This registration is invalid without signature from an authorized officer)*

Name ..... Signature .....
Job Title .....
Tel ..... Fax .....

## Method Of Payment

*Please kindly complete and return the reply form together with:*

**Local Participants**

- By Bank draft which are made payable to

**Summit Technology Management**

**International Participants**

- By Direct Transfer/Bank Draft:

Public Bank Details: **Public Bank Berhad**
**Level 1, Public Bank Tower,**
**No 19, Jalan Wong Ah Fook,**
**80000 Johor Bahru, Johor**

- Account No : **3153933702**
- Please instruct your bank to remit us the full amount, net of bank charges.

### Cancellation & Substitutions

A full refund will be promptly made for all written cancellations 2 weeks before the meeting. 50% refund will be made for written cancellations received 7 days before the meeting. A substitute may be made at any time.

### Note

A) The organizer has the right to make any amendments that they deem to be in the best interest of the course and to cancel the course if insufficient registrations are received a week before course commencements date.

B) **CERTIFICATE OF ATTENDANCE** will be awarded at the end of the course.

| Course Fee | | Per Course |
|---|---|---|
| Participates from Malaysia | RM | 2,500 per 2.5 day |
| Participates from Thailand | THB | 35,000 per 2.5 day |
| Participates from Indonesia | IR | 8,000,000 per 2.5 day |
| Participates from Singapore | SGD | 1,500 per 2.5 day |
| Other International Participates | EURO | 1,900 per 2.5 day |

** Ask about out multiple course and participants discounts.*

**Course participates will receive a complementary copy of our Engineering Design Guidelines - Part 1 - Piping Fluid Flow and Line Sizing - Worth USD $395.00*

**** The three or five day course fees are as follows which includes refreshments and lunch, but does not include transportation or accommodation.***

KLM Technology Group

PRACTICAL ENGINEERING SOLUTIONS


*Mailing Address*

**KLM Technology Group Sdn. Bhd.**
# 3-12 Block Aronia
Jalan Sri Perkasa 2
Taman Tampoi Utama
81200 Johor Bahru, Malaysia

www.klmtechgroup.com
www.kolmetz.com
karl.kolmetz@klmtechgroup.com
Tel / Fax No. : +60 7 241 8396
Registration: +6012 7800 252


**Organization**

**Venue**

**Hotel Istana Kuala Lumpur City Centre**
73, Jalan Raja Chulan
50200 Kuala Lumpur, Malaysia
Tel : +60 3 2141 9988
www.hotelistana.com.my