Oil Analysis

level I&II

Most maintenance programs only achieve 10% of the benefits available from oil analysis . . . Learn how to get the most out of oil analysis when you attend these powerful training sessions.

You Will Learn:

- How to read oil analysis reports-and understand them
- How to tell if you are using the wrong oil
- How to squeeze maximum life out of lubricants
- How to set optimum oil analysis limits
- How to reduce oil consumption for easy near-term savings

When & Where in 2011:

4 Days Training Course

- **March 22-25, 2011**
- **July 5-8, 2011**
- **November 22-25, 2011**

***At* Novotel Hotel, Bangna, Bangkok**

Enrollment Fee:

Course Fee per person:
Baht 19,400.- (excluding VAT 7%)

ENROLL TODAY !

FOCUSLAB LTD
Tel : (662) 361 8600-3
Fax : (662) 361 8567
Email : focuslab@focuslab.co.th
Website : www.focuslab.co.th

FOCUSLAB™ Fluid & Oil Analysis Technology
NORIA Franchise Partner

Oil Analysis I & II Outline

Oil Analysis Maintenance Strategies

- Roles of reliability-centered maintenance(RCM)
- Four important maintenance strategies
- Determining which strategy meets your needs
- Proper use for each strategy
- Condition-based oil analysis
- Identifying root cause with oil analysis
- Proactive oil analysis v.s. predictive maintenance
- Oil analysis application you may not have considered

Lubricant Fundamental

- Oil formulation and its importance
- Six keys function of lubricating oils
- Comparison of mineral v.s. synthetic oils
- In-depth look at additives and their functions
- Machine conditions requiring additives
- Review of lubrication regimes

Oil Sampling Fundamentals

- Six steps to reliable and easy oil sampling
- How to find the best sampling location
- Using primary and secondary sample point
- Recommendation for sampling valve and hardware
- Oil sampling procedures
- Setting optimum oil sampling frequencies
- Sampling inaccessible equipment

Fluid Properties Analysis

- Conditions that fuel oil oxidation
- Common pointers for identifying oil oxidation
- Measuring and trending viscosity
- Proper use of viscosity index improvers
- Setting optimum limits for viscosity trending
- Diagnosing over-limit viscosity results
- Diagnosing under-limit viscosity results
- Using Acid and Base Numbers
- Common TAN trends for different oil types
- Using FTIR for detecting common problems
- When and how to use the RPVOT (RBOT) test
- Measuring antioxidant life
- Diagnosing over-limit oxidation trends
- Detecting additive depletion
- Simple field test to detect oil degradation

Contamination Control and Proactive Maintenance

- Overview of seven common contaminants
- Oil cleanliness and oil life extension benefits
- How to use the ISO Solid Contaminant Code
- Proactive maintenance in three easy steps
- Case Study for proactive maintenance
- Recommendations for oil filters and tank breathers
- Portable filtration carts-three ways to use them
- Setting target for oil cleanliness
- The effects of particle contamination
- Understanding particle size and count
- Diagnosing over-target particle counts
- Detecting and controlling moisture contamination
- The effects of moisture contamination
- Setting optimum limits for moisture
- Moisture detection methods
- Diagnosing over-limit moisture results
- Selecting moisture removal/filtration methods
- Lubrication management best practices
- Controlling air entrainment and foam
- The effects of heat contamination
- Glycol contamination
- Dealing with soot
- Understanding fuel contamination

Machine Fault Detection and Wear Debris Analysis

- Test for wear element analysis
- Technologies used to analyze wear debris
- Spark emission and ICP spectrometers
- Measuring large particles with Rotrode Filter
- Understanding wear metal trends
- Setting optimum limits for wear metals
- Using machine metallurgy for diagnosis
- Potential sources of metals in oil
- Elemental analysis vs. ferrography
- Using wear particle diagnosis templates
- Creating a patch filtergram
- Identifying wear debris with your microscope
- Simple on-site screening tests for wear debris

Start & Design Oil Analysis Program

- Program implementation steps
- Basic for selecting an oil analysis lab
- Options to consider before getting started
- Goals for oil analysis
- Costs and benefits - what to expect

How to Select Routine and Exception Test Based on Reliability Goals

- Selecting routine for diesel engines
- Selecting routine for turbo machinery
- Selecting routine for bearing, hydraulic, compressors
- Selecting Exception Test
- A quick method for selecting sample frequencies

How to Set Oil Analysis Target & Alarm Limits

- Four considerations when setting limits
- Proactive goal based limits
- Predictive rate-of-change limits
- Remaining useful life aging limits
- How to use statistical limits
- Calculating statistical rate-of-change limits
- Six common data interferences

How To Read Oil Analysis Report / Data Interpretation

- Keys Requirement Before you can read report
- Understand Oil Analysis Trend
- Interpret data to:
  - detect the use of the wrong lubricant
  - detect dispersancy failure
  - detect antioxidant depletion
  - Identify failure due to lubrication starvation

Field Inspection & Tests

- Simplify oil analysis using easy field tests
- Ten easy tests you can do without instruments
- Combining field test data with lab test data
- Partnering oil analysis with vibration analysis
- The use of oil analysis software
- The anatomy of an oil analysis report
- Case studies-try to figure out what's going on

Integration Oil Analysis with Vibration

- Strategy for integrating different technologies
- Combined approach for confirming faults
- Application Strengths
- Key to successful integration of Oil Analysis and Vibration Analysis
- Case Study

Workshop – Interactive Case Studies Workshop

Learn the “Best Practices” of Oil Analysis

A Step-by-Step Gameplan for Reaching World-Class Status

Who Should Attend?

- All Maintenance Professionals
- Predictive Maintenance Technicians
- Reliability Engineers
- Lubrication Engineers
- Equipment Operators
- Maintenance Managers
- Operations Managers
- Vibration Instrument Specialists

Industries That Will Benefit From This Courses:

- Power Generation
- Petro Chemical
- Pulp and Paper
- Primary Metals
- Process Manufacturing
- Automotive Manufacturing
- Transportation
- Earthmoving & Mining

If You Have Any Of The Following Machines, This Seminar Is A Must:

- Gas Turbines
- Steam Turbines
- Gear Boxes
- Hydraulic Systems
- Compressors
- Diesel Engines
- Rolling Mills
- Process Pumps
- Final Drives
- Motor Bearings

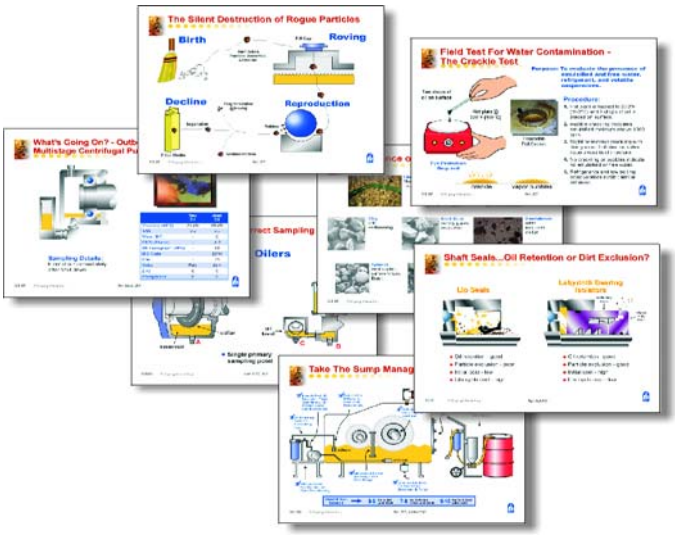
Expand Your Oil Analysis Skills

And Get Better Results . . . A Whole Lot Faster!

If you’re like many oil analysis users, you may already be finding your way around oil analysis. You may just be using it exclusively to predict catastrophic failures. Or, you may be basing your oil drains on the recommendations of your oil analysis lab. Either way, you probably know there’s a lot about oil analysis you haven’t mastered . . . and you might be wondering what you are missing out on.

Wouldn’t you like to know **ALL** about what oil analysis can!

Presentation Slides are Full Color and High Quality, Making the Information Easy to Comprehend and Remember.



“This seminar produced instantly usable knowledge which will definitely result in changes in the way we handle lubricants and lubricated systems.”

Joe Kelly, Maintenance Engineer, Akzo Nobel

“One of the most useful seminars I have ever attended. Not bogged down with theory, just the facts.”

Dave Roycraft, Maintenance Manager, Chrysler

Oil Analysis I&II - The Complete Course For Maintenance Professionals

This Course Will Teach You Exactly What You Need To Know In Just Four Days

What You Will Learn

- How to read oil analysis reports-and understand them.
- How to use oil analysis to tell you when your using the wrong lubricant.
- How to ensure you get a data rich sample every time.
- How to squeeze maximum life from lubricants.
- How to integrate oil analysis with vibration analysis.
- How to set optimum sampling frequencies.
- Ten easy oil analysis tests you can do-without instruments.
- Easy to follow troubleshooting fault trees made just for oil analysis.
- How to select the right oil analysis lab for your plant.

4 Days Training Course
Scheduled Classes for 2011

- **March 22-25, 2011**
- **July 5-8, 2011**
- **November 22-25, 2011**

***At* Novotel Hotel, Bangna, Bangkok**

Course Fee per person:
Baht 19,400.- (excluding VAT 7%)

Each Attendee Receives:-

- ✓ Complete Full Color Course Manual
- ✓ How To Sample Oil-Chart & CD
- ✓ Oil Analysis Basics

☞ To Enroll :

Focus-Noria Thailand
FOCUSLAB LTD
Tel : (662) 3618600-3
Fax : (662) 3618567
Email : focuslab@focuslab.co.th

Visit Our Website at

www.focuslab.co.th
or
www.noria.com

Your Money-Back

Guarantee of Satisfaction

Focus-Noria Thailand proudly stands behind our public courses 100% with our no-risk guarantee of satisfaction. So, if you're hesitating because you're not quite sure if this course is for you-go ahead and enroll. We guarantee you'll be thrilled with the vital skills, powerful techniques and important insights you gain-or we'll give you your money back in full. You have nothing to lose and a wealth of hard hitting oil analysis know-how to gain!

FOCUSLAB™ Fluid & Oil Analysis Technology NORIA Franchise Partner

Focus-Noria Thailand
FOCUSLAB LTD