Sunday, 23 April 2017

7:30 a.m. – 5:00 p.m. **Symposium and Short Course Registration** ..... Foyer (Exhibit Hall A)

Training: Fundamentals of Process Analysis

8:00 a.m. – 8:15 a.m. **Introductions** ..... Conference Room 102
Safety Moment, Introductions: Instructors and ISA AD Chair, Class Attendees, Analyzer Role, Agenda Review, and Class Protocol
Mike Chaney, Educational Chair and Dr. Paul Barnard, AD Director

8:15 a.m. – 9:15 a.m. **Session 1: Analyzer Engineering** ..... Conference Room 102
Topics: Basic Process Chemistry, Scoping Measurement Needs and Locations, P&IDs, Analyzer Technology Selection, Cost Estimates, Specification Packages and Application Data Sheets, Supplier Bid Evaluations, Drawing Reviews
Paul Cammarata, Instructor

9:15 a.m. – 10:15 a.m. **Session 2: Spectroscopy** ..... Conference Room 102
Topics: Basic Spectroscopy, Beer's Law, Infrared Analyzers (Dispersive, Non-dispersive & FTNIR), Ultraviolet and Visible Analyzers, Raman, NMR, TDLs
Phil Harris, Instructor

10:15 a.m. – 10:30 a.m. **Break..... Conference Center Lower Level**

10:30 a.m. – 11:30 a.m. **Session 3: Oxygen Analysis** ..... Conference Room 102
Topics: TDL, Paramagnetic, Zirconium Oxide, Electrochemical, Chemiluminescence, Dissolved Oxygen
Stuart Simmonds, Instructor

11:30 a.m. – 12:00 p.m. **Lunch** ..... Conference Rooms 212-214

12:00 p.m. – 2:00 p.m. **Session 4: Gas Chromatography** ..... Conference Room 102
Topics: Basic Chromatography, Carrier, Columns, Injection Valves, Separation, Retention Time, Detectors, Process GC Techniques, Applications, Analyzer Readout
Ulrich Gokeler, Instructor

2:00 p.m. – 2:15 p.m. **Break..... Conference Center Lower Level**

2:15 p.m. – 3:15 p.m. **Session 5: Sample Conditioning System** ..... Conference Room 102
Topics: Function of the Sample Conditioning System, Design Issues (Temperature, Pressure, Flow Rate, Dew Point, Bubble Point), Sample Probe, Sample Transport, Sample Lines, Sample Conditioning Components (Filters, Rotameters, Valves, Switches), Calibration and Validation
Michael Hoffman, Instructor

3:15 p.m. – 4:15 p.m. **Session 6: System Design** ..... Conference Room 102
Topics: Building Designs, Utilities and Infrastructure, Sample Systems and Analyzers, Data Communications, Engineering Calculations, Safety Standards, Drawing Packages, Factory Acceptance Tests, Shipping and Logistics, Site Acceptance Tests, Final Documentation
Troy Lewis, Instructor

4:15 p.m. – 4:30 p.m. **Conclusion: Q&A and Fundamentals Review** ..... Conference Room 102
Mike Chaney, Education Chair

Training: Advanced Process Analysis

8:00 a.m. – 4:30 p.m. **Increasing Sample System Reliability by Better Design** ..... Conference Room 101
This fast-paced course explains many of the engineering procedures needed to design a gas or liquid sampling system for a process analyzer. Due to the advanced level of this course, awareness of the basic objectives of a sampling system is assumed: to deliver a compatible, timely, and representative sample to a process analyzer in a reliable, cost-effective and safe manner.
Tony Waters, Instructor

8:00 a.m. – 4:30 p.m. **Chemometrics for Analyzers** ..... Conference Room 103
This course examines a series of algorithmic approaches with the goal of streamlining chemometric model construction to make the analyzers significantly more robust when put into routine practice.
Dr. Brian Rohrback and Dr. Michael Roberto, Instructors

4:40 p.m. – 5:15 p.m. **ISA SP76 Standards Meeting** ..... Conference Room 104
Wes Carter, AD SP76 Chair

5:15 p.m. – 6:15 p.m. **Analysis Division Business Meeting** .... Conference Room 104
Dr. Paul Barnard, AD Director (Chair) and Cindy Cauthen, AD Director Elect (Recording Secretary)

6:00 p.m. – 7:30 p.m. **Vendor Exhibits** ..... Exhibit Hall A
Hospitality and Welcome to AD

Monday, 24 April 2017

7:00 a.m. – 8:00 a.m. **Attendee Breakfast** ..... Exhibit Hall A

7:30 a.m. – 5:00 p.m. **Symposium Registration** ..... Foyer (Exhibit Hall A)

8:00 a.m. – 5:00 p.m. **Spouses Program/Lounge .....** Conference Room 205
Tours, Shopping, Sight-Seeing, and Recreation

8:00 a.m. – 8:15 a.m. **General Session, Welcome and Introduction....** Ballroom B-C
Dr. Paul Barnard, AD Director

8:15 a.m. – 9:45 a.m. **Session 1: Emerging Technology** ..... Ballroom B-C
Stuart Simmonds, Session Moderator

- **AD.17.01.01**—Novel Instrumentation for Continuous Measurements of Trace Gases for Industrial Process Monitoring and Control
  Kyle Owen, Jimmy Liem, Bob Provencal, Manish Gupta, J. Brian Leen, and Douglas S. Baer, ABB, Inc.
- **AD.17.01.02**—Multi-Component Tunable Laser Analyzers for Process Control
  Pawel Kluczynski, Krzysztof Siembab, Janusz Derezynski, Mateus Strazewski, Jedrzej Peziak, Dominik Luczak, Szymon Tomczyk, Marcin Suski, and Adrian Wojcik, Airoptic Sp. Z O.O.
- **AD.17.01.03**—Hyphenation of Vacuum Ultraviolet Spectroscopy Detection with Detailed Hydrocarbon Analysis for Speciated Characterization of Petrochemical Samples (VUV-DHA)
  Tom Grills, John J. Grills III, and Phillip Walsh, Envantage, Inc.

9:00 a.m. – 7:30 p.m. **Vendor Exhibits** ..... Exhibit Hall A

9:45 a.m. – 10:30 a.m. **Break/Vendor Exhibits** ..... Exhibit Hall A

10:30 a.m. – 12:00 p.m. **Session 2: Chromatography 1** ..... Ballroom B-C
Tracy Dye, Session Moderator

- **AD.17.02.01**—Enhanced Analytical Reliability and Simplified Maintenance in Process Gas Chromatography
  Ulrich Gokeler, Siemens
- **AD.17.02.02**—Automated Valve Timing Adjustments for Gas Chromatographs
  Shane Hale, Emerson
- **AD.17.02.03**—The Fine Art of Chromatogram Reading
  Tony Waters, Analyzer Consulting Engineers LLC

12:00 p.m. – 1:15 p.m. **Lunch/Vendor Exhibits** ..... Exhibit Hall A

1:15 p.m. – 1:30 p.m. **General Session: Announcements** ..... Ballroom B-C
Dr. Paul Barnard, AD Director

1:30 p.m. – 2:45 p.m. **Session 3: Management of Analytics** ..... Ballroom B-C
Lee Robison, Session Moderator

- **AD.17.03.01**—Process Analytics in the Age of Digitalization
  David Novak, Siemens
- **AD.17.03.02**—Resolving the Analytical Conflict Between the Lab and Process Data
  Steve Bostic, Joe Perron, and John Crandall, Falcon Analytical
- **AD.17.03.03**—AMADAS— The Value of Extended Data to Support Analytical Performance and Reliability
  Michael Hoffman, Siemens

2:45 p.m. – 3:30 p.m. **Break/Vendor Exhibits** ..... Exhibit Hall A

3:30 p.m. – 5:00 p.m. **Session 4: Applications in Refining** ..... Ballroom B-C
Sandra Krauthamer, Session Moderator

- **AD.17.04.01**—Reducing Mogas Reid Vapor Pressure (RVP) Give-away Using Online Raman Spectroscopy: A One-Year Case Study
  Lee Smith, Robert Benner, Giancarlo Aquiree, Will Warkentin, Angela Keys, and Paul Singh, Process Instruments Inc.
- **AD.17.04.02**—Refinery Laboratories Role in the Oversight of Process Analyzers
  Tim and Paul Davidson, Tesoro Refining and Marketing LLC
- **AD.17.04.03**—Continuous Emission Monitoring on an FCCU Regenerator: A Case Study
  Dave Eskridge, Jeremy Meeks, and Erin St. John, Applied Controls Analytical System Integration

5:00 p.m. – 7:30 p.m. **Reception/Vendor Exhibits** ..... Exhibit Hall A

Tuesday, 25 April 2017

7:00 a.m. – 8:00 a.m. **Attendee Breakfast** ..... Exhibit Hall A

7:30 a.m. – 5:00 p.m. **Symposium Registration** ..... Foyer (Exhibit Hall A)

7:30 a.m. – 5:00 p.m. **VIP Visitors' Day** ..... Exhibit Hall A

8:00 a.m. – 5:00 p.m. **Spouses Program/Lounge .....** Conference Room 205
Tours, Shopping, Sight-Seeing, and Recreation

8:05 a.m. – 8:15 a.m. **General Session, Welcome and Introduction**
Dr. Paul Barnard, AD Director ..... Ballroom B-C

8:15 a.m. – 9:45 a.m. **Session 5: Process Applications I** ..... Ballroom B-C
Bac Vu, Session Moderator

- **AD.17.05.01**—In-Situ H2S and SO2 Tail Gas Analysis with TDLS
  Dr. Peter Geiser, Viacheslav Avetisov, and Peter Berg, NEO Monitors AS
- **AD.17.05.02**—A Novel Design for a Non-Ideal Axially Mounted Tunable Diode Laser Application on a Catalytic Regeneration Process
  James Osprey, Stuart Simmons, and Stephen Whitney, Novatech Analytical Solutions and Shell Canada Ltd.
- **AD.17.05.03**—Process Raman Gas Analysis in Ammonia Production and Refining
  Susan P. Harris, Dr. Scott Sutherland, Dr. Peter Van Vuuren, and Travis Miller, Endress+Hauser, Inc.

9:00 a.m. – 5:00 p.m. **Vendor Exhibits** ..... Exhibit Hall A

9:45 a.m. – 10:30 a.m. **Break/Vendor Exhibits** ..... Exhibit Hall A

10:30 a.m. – 12:00 p.m. **Session 6: Spectroscopy** ..... Ballroom B-C
John Romas, Session Moderator

- **AD.17.06.01**—Zero Gap Analyzer Design for High Sensitivity Measurements of Atmospheric Constituents In Process Gas Streams
  Jeff Gunnell, Ruth Lindley, Paul Black, Gordon Robertson, Beth Livingstone, Dave McMillan, Thomas Bacquart, and Arul Murugan, Emerson Automation Solutions
- **AD.17.06.02**—Glycol Dehydration Using a Novel In-line FTIR Spectrometer
  Dan Wood, Keit Spectrometers
- **AD.17.06.03**—Real-Time Solvent Mixing Process Analysis by a Low Cost Raman Photometric Analyzer
  Dr. Honggang (Hank) Li, Schneider Electric/Applied Instrument Technologies

12:00 p.m. – 1:15 p.m. **Lunch/Vendor Exhibits** ..... Exhibit Hall A

1:15 p.m. – 1:30 p.m. **General Session: Announcements** ..... Ballroom B-C
Dr. Paul Barnard, AD Director

1:30 p.m. – 2:45 p.m. **Session 7: Liquid Applications** ..... Ballroom B-C
Julie Cuevas, Session Moderator

- **AD.17.07.01**—Fast and Reliable On-Line Analysis of Oils in Water by Hydrocarbon Detection
  Oliver Rothe, LAR Process Analysers AG
- **AD.17.07.02**—Real Time Measurement of Non-Fluorescent Oil in Water Using an On-Line Absorbance Monitoring System
  Jonathan Cole and Jeyan Sreekumar, Advanced Sensors Ltd.
- **AD.17.07.03**—Steam Sampling 101: Basics and What Really Matters
  Jeff McKinney, Sentry Equipment

2:45 p.m. – 3:30 p.m. **Break/Vendor Exhibits.....** Exhibit Hall A

3:30 p.m. – 4:45 p.m. **Session 8: Market Place and International** ..... Ballroom B-C
Denny Coric, Session Moderator

- **AD.17.08.01**—UAE-AD 2017
  Mohammed Loch, DMS Global
- **AD.17.08.02**—Global Markets for Process Analytical Instruments (PAI): 2016 to 2019
  Steve Walton, PAI Partners/Walton Associates

Continued on other side

5:30 p.m. – 6:30 p.m. **Banquet Social Hour** ..... Exhibit Hall A

6:30 p.m. – 8:00 p.m. **Banquet** ..... Ballroom D
Keynote: *Kevin Debruin, Jet Propulsion Laboratory, NASA*
(Vendor exhibits closed during/after banquet)

Wednesday, 26 April 2017

7:00 a.m. – 8:00 a.m. **Attendee Breakfast** ..... Exhibit Hall A

7:30 a.m. – 5:00 p.m. **Symposium Registration** ..... Foyer (Exhibit Hall A)

8:00 a.m. – 5:00 p.m. **Spouses Program/Lounge .....** Conference Room 205
Tours, Shopping, Sight-Seeing, and Recreation

8:05 a.m. – 8:15 a.m. **General Session, Welcome and Introduction**
Dr. Paul Barnard, AD Director ..... Ballroom B-C

8:15 a.m. – 9:45 a.m. **Session 9: Analysis Improvement** ..... Ballroom B-C
Mike Chaney, Session Moderator

- **AD.17.09.01**—Online Analysis of HF Alkylation Catalyst: Comparison Between Hard and Inferential Methods
  Marc Trygstad, Yokogawa
- **AD.17.09.02**—Making Chromatography More Robust
  Dr. Brian Rohrback and Scott Ramos, Infometrix
- **AD.17.09.03**—Near Infrared Analysis of Hydrocarbon Composition and Properties in Natural Gas Applications
  Phil Harris, Insight Analytical Solutions

9:00 a.m. – 3:15 p.m. **Vendor Exhibits** ..... Exhibit Hall A

9:45 a.m. – 10:30 a.m. **Break/Vendor Exhibits** ..... Exhibit Hall A

10:30 a.m. – 12:00 p.m. **Session 10: Mass Spectrometry Applications** ... Ballroom B-C
Tim Kuiken, Session Moderator

- **AD.17.10.01**—High-Speed Formaldehyde Analysis for the Process-Line and Laboratory: SIFT-MS
  V.S. Langford, M. Perkins, D.B. Milligan, B.J. Prince, M.J. McEwan, and T. Wilks, Syft Technologies Ltd.
- **AD.17.10.02**—Comparison of Mass Spectrometry and Gas Chromatography for the Measurement of BTU in Flare Gas
  Tim M. Davidson, Rodelio Limfueco, Tony Rodriguez, Rexford Demazeliere, Artemio Vilda, Arthur Blancaflor, and Horace (Lee) Robison, Tesoro Refining and Marketing LLC
- **AD.17.10.03**—From Continuous Monitoring of Fuel Gas Physical Properties to the Development of Complex Molecules by Bioprocessing, How Mass Spectrometry is Playing Its Part in the Changing Landscape of Fuel Production and Utilization
  Daniel Merriman and Graham Lewis, ThermoFisher Scientific

12:00 p.m. – 1:45 p.m. **Lunch/Vendor Exhibits** ..... Exhibit Hall A

1:45 p.m. – 2:00 p.m. **General Session: Announcements** ..... **Ballroom B-C**
Dr. Paul Barnard, AD Director

2:00 p.m. – 2:45 p.m. **Session 11: Analytical Systems** ..... Ballroom B-C
Don Stamp, Session Moderator

- **AD.17.11.01**—The Need for a Better Sample Conditioning System, Innovated Combination of Proven Components
  Gert Folmer, Hobre
- **AD.17.11.02**—Sample System Effects on Trace Moisture Measurement in Ethylene Processing, A Case Study
  Brian Picard, Ken Tripp, Jr., Jung-il Kim, and Stephane Cappe, Southern Analytical Inc, Dow Chemical Co., and AMETEK Process Instruments

2:45 p.m. – 3:15 p.m. **Break/Vendor Exhibits** ..... Exhibit Hall A

3:15 p.m. – 4:45 p.m. **Session 12: Process Applications II** ..... Ballroom B-C
Jude Bashara, Session Moderator

- **AD.17.12.01**—Installation of a Sonic Velocity Analyzer for the Control of an Acid Gas Wet Scrubber
  J.C. Arènes, Novatech
- **AD.17.12.02**—The Adsorption Behavior of Trace Moisture in Natural Gas Sampling Systems
  Jake Tivey and James Arnott, Orbital Gas Systems
- **AD.17.12.03**—TBD

4:45 p.m. – 5:00 p.m. **General Session, GTFK and POY Awards** ..... Ballroom B-C
Paul Cammarata, Moderator
Closing Remarks ..... Ballroom B-C
Dr. Paul Barnard, AD Director

Thursday, 28 April 2016

7:30 a.m. – 4:30 p.m. **Vendor Training Registration** ..... Foyer (Exhibit Hall A)

8:00 a.m. – 12:00 p.m. **Spouses Program/Lounge .....** Conference Room 205
Tours, Shopping, Sight-Seeing, and Recreation

12:00 p.m. – 1:00 p.m. **Lunch** ..... Conference Center

8:00 a.m. – 4:00 p.m. **Presentations** ..... Ballroom B-C

Session 1: 2017 ISA AD Workshop:
The Process Analytical Enterprise in 2020 and Beyond—A mini-symposium exploring the implications of Industry 4.0 for online stream analysis in the upstream, downstream, refining, and petrochemical industries.

Vendor Training

8:00 a.m. – 5:00 p.m. **Session 2: Siemens Training** ..... Conference Room 102
Maxum Edition II (Gas Chromatograph)
After a brief product update on the Maxum GC platform, training will cover upgrading a Maxum GC to use the new color touch screen display. Attendees are encouraged to bring their laptops.

8:00 a.m. – 3:00 p.m. **Session 3: Ametek Training** ..... Conference Room 103
Close-coupled Extractive Combustion Analyzers for Control & SIS Implementation (Models WDG-IV and WDG-V)
The measurement of combustion oxygen, combustibles (C0e), and hydrocarbons will be reviewed as applied to fired process heaters and boilers for control and SIS (safety) implementation.

8:00 a.m. – 12:00 p.m. **Session 4 (a.m.):**
Yokogawa Training ..... Conference Room 104
TDLS8000 Quick Startup, Troubleshooting and Maintenance
Topics will include the following: Basic Theory of TDLS, Understand Application Essentials, Use the TruePeak Software, Learn Calibration and Validation, Learn to Use Troubleshooting Diagnostics

1:00 p.m. – 5:00 p.m. **Session 5 (p.m.):**
Yokogawa Training ..... Conference Room 104
GC8000 (Gas Chromatograph) Operation and Maintenance
Class will start with brief overview of Chromatography basics. Primary component service procedures and recommendations will be covered, for items as Oven Valves, Liquid Sample Valves, and key parts. Programming and program modification will be next topic as done both on the unit and remotely accessed. This will cover standard chromatography, concurrent chromatography, and parallel chromatography as done on the GC8000 platform. Attendees will have the opportunity to actually perform these operations (change gate times, valve timing, standard area, cal factor etc.) and as well as the re-integration function on training units present.

8:00 a.m. – 12:00 p.m. **Session 6: Emerson Training** ..... Conference Room 101
XA Series Gas Chromatographs (Hands-On)
Training will start with an overview of the XA Series gas chromatographs, with a focus on the common components across the range. The differences between the GC's in the series will then be discussed, with regard to applications and installation considerations. We will then look at the MON2020 software, focusing on the chromatogram viewer and the typical diagnostic reports. Attendees will receive a fully functioning copy of the MON2020 software.

8:00 a.m. – 12:00 p.m. **Session 7: ABB Training** ..... Ballroom F
PGC5000 and the STAR Analyzer Maintenance and Monitoring System
An introductory operational overview of the PGC5000 process gas chromatograph and the STAR Analyzer Maintenance and Monitoring System. Students will go through each operational menu of the PGC5000 platform and review in general the analytical components and configurations that support basic GC applications and analyses. A brief overview of the new PGC5000 oven with integrated controller (PGC5000 Integrated Controller) and optional wireless UI will also be provided. The STAR Analyzer Maintenance and Monitoring System will be introduced including, STAR Client operations (statistical quality control, remote monitoring and trending), STAR Server operations (network architecture, data storage and retrieval), how to remotely manage all files on all networked analyzers, and linking existing VistaNET networks and hardware with STAR including 3rd party OPC servers.

8:00 a.m. – 12:00 p.m. **Session 8: ThermoFisher Scientific Training** ..... Ballroom G
Thermo Scientific Prima Pro Mass Spectrometer
At this class, we will demonstrate the ease with which our Prima PRO mass spectrometer undergoes routine maintenance. Our knowledgeable trainer will show how, with minimal experience, the replacement components are swapped out and the analyser back up and running in the time it takes to brew a decent pot of coffee. We will also be on hand to answer any questions you may have about the operation and maintenance of the mass spectrometer and give attendees the opportunity to operate the simple but effective user interface for themselves.

8:00 a.m. – 5:00 p.m. **Session 9: PAC Training** ..... Conference Room 105
PAC/Antek Process Sulfur Analyzer Transfer Line and PyroTube Replacement
This training will cover the correct procedures to remove and replace the transfer line and the pyrotube, while also instructing on the proper insertion depth of the transfer line into the pyrotube. The training will cover 6000 series, 6200 series and NSure analyzers, We will also talk about the basic flow path and theory of operation for all our process sulfer analyzers. Using the new NSure we will highlight its many improvements and briefly cover the new user interface feaures.

8:00 a.m. – 12:00 p.m. **Session 10 (a.m.):**
Process Instruments Training ..... Conference Room 204
On-line and Lab Raman: Instrumentation Training
Factory instrument engineers will provide best practices techniques for using Raman within the refinery. Topics include:Sampling, Maintenance, and Modeling Best Practices

8:00 a.m. – 12:00 p.m. **Session 11 (a.m.): Servomex Training** ..... Ballroom H
Servomex 2700 Series Analyzers
Topics include: basic Zirconia and Thick Film Technology theory, software navigation, calibration procedures and interpretation of calibration data, analyzer and signal diagnostics, heater diagnostics, pneumatic diagnostics, filters, probe, pcb, sensors and heater replacement, installation and access requirements and location advise.

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Analysis Symposium2017

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Pocket Program