



## Meeting At-A-Glance

- Location: Aramco Services Facility
- Three Workshops
- Networking 6-7 PM
- Dinner at 7 PM
- Speakers at 8 PM

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## Monthly Meeting September 4, 2008

### Location: Aramco Services Facility

#### Legal Aspects of the March 23, 2005 Explosion at BP's Texas City Refinery

##### Speaker: Roger E. Sowell, Esq.

**Abstract:** The deadly explosion of March 23, 2005 killed 15 and injured 170 others. This explosion has reportedly cost BP more than \$2.1 billion in legal settlements. Additional millions will be or have been spent to repair the damaged refinery units.

The explosion was caused by a series of errors while starting up a distillation tower at the C5/C6 Isomerization Unit following a scheduled shutdown for maintenance. The presentation briefly reviews the events of the startup, and other factors that contributed to the deaths and injuries.

The legal setting at this refinery is outlined, including some of the legal theories of liability, and defenses. These include criminal violations of the Clean Air Act, the torts of negligence and wrongful death, professional malpractice, and violations of other regulations.

The presentation then discusses important actions taken by Federal agencies as a result of this explosion, and that affect refineries. Several do's and don'ts are given. Designers and operators of refineries and chemical plants should be aware of these to enhance process safety.

**Bio:** A native Texan, Roger Sowell is a California attorney and holds a B.S. in chemical engineering. In his law practice, he advises and defends refining and other operating companies in civil matters related to process safety, environmental and other regulatory matters. As an attorney who understands engineers, he also works with other attorneys on matters where expert witnesses and technical lay witnesses are involved.

Before opening his law office, he worked for 20 years in more than 75 refineries and petrochemical plants in a dozen countries on four continents. His engineering work includes most aspects of designing, running, and enhancing an oil refinery.

He has worked for Diamond Shamrock, Champlin, Solomon Associates, Profimatics, Cryogenic Experts, and Roger Sowell & Associates. He is published in Hydrocarbon Processing, and CryoGas International. He is a member of the California Bar, the Federal Bar, the Beverly Hills Bar Association, Los Angeles County Bar Association, AIChE and its Safety and Health Division.



## Workshop Details: Workshops begin at 5:30 PM

### Process Engineering/Plant Operations (PE/PO): Radioisotope (Sealed Source) Applications for Obtaining Detailed Process Knowledge in the Refining and Chemical Industries

#### Speaker: Lowell Pless Business Development Manager – Sealed Source Technology Tracerco

**Abstract:** In chemical plants and refineries, there generally is not enough instrumentation in the right places in our processes. During the design phase, choices were made between knowing more about the process and saving capital funds. When a problem appears during operation, there are gaps in the knowledge of what has happened due to a lack of instruments in the places where knowledge is not routinely required. Process engineers and operations personnel need to know what is happening so they can take corrective action. When knowledge is missing, they may take actions that make matters worse.

For distillation and separation processes Chemical Engineers have historically relied upon plant process measurements such as flow rates, temperatures, and pressures and model or simulation results for data to solve troubleshooting problems. An array of on-line diagnostic services are available that provide additional data offering real-time information on how pieces of process equipment are operating. The most common is gamma scanning. Gamma scans provide a density profile of the internal process of operating distillation columns and other process vessels. The presenter will show case studies where scanning revealed vital process information to solve an operating problem, or helped make a revamp/re-design successful.

Additional derivatives from gamma scanning of detecting flow distribution patterns will be demonstrated. The CAT-Scan technique is a specialized horizontal gamma scan used to generate a topographic profile of the internal cross-sectional density of process equipment. This profile is useful for the detailed study of liquid flow distribution through packed columns as well as having applications beyond distillation columns. A hybrid application involving tracers and scanning on fixed bed catalytic reactors will also be discussed.

**Bio:** Lowell Pless is currently Tracerco's Business Development Manager for Sealed Source Technology in Pasadena, Texas. Lowell has been applying radioisotope techniques in process troubleshooting for 20 years. He previously held positions in Europe and North and South America as Operations Manager. He earned a BS degree in Chemical Engineering from the University of Texas at Austin, is a registered Professional Engineer by the State of Texas, and has been a life-time member of A.I.Ch.E.

### Environmental: To Be Announced—watch the website!

#### Speaker: Steve Beach of RPSEA

**Abstract:** RPSEA is a non-profit corporation formed by a consortium of premier U.S. energy research universities, industry and independent research organizations. RPSEA has established and coordinated a public benefit research program to identify and develop new methods and integrating systems for exploring, producing, and transporting-to-market energy, or other derivative products from natural gas, in Ultra-Deepwater and Unconventional Natural Gas and Other Petroleum Resources. The Energy Policy Act of 2005 established a natural gas supply research and development program associated with these resources to be funded over the next 10 years. As the consortium chosen to manage these funds, RPSEA will sharply focus its experience, expertise, and capabilities on meeting the program's objectives: to maximize the value of domestic natural gas and oil resources through new technologies to increase production, and to do so in less expensive, safer and more efficient and environmentally benign ways.

**Bio:** Steve Beach is currently Director of Corporate Affairs for RPSEA (Research Partnership to Secure Energy for America). Past job responsibilities have included marketing leading edge Exploration and Production technology from research and development organizations and institutions to approximately 1200 companies active in unconventional resource plays such as coalbed methane, low permeability sands and carbonates and Devonian shale. His primary focus in helping these companies was to control or reduce cost while increasing production by applying advanced exploration, production and processing technologies. He graduated from Ohio State University with a degree in Geology and Mineralogy and since that time has worked as a geologist for a host of energy companies such as United Energy Resources, MidCon Corporation, OXY USA, KN Energy and the Texas Independent Producers and Royalty Owners Association.

### CAST: Fitting of Vapor-Liquid Equilibrium (VLE) Binary Parameters using the GPA Data Bank

#### Speakers: Dr. Kai Fischer and Todd J. Willman, PE

**Abstract:** The Gas Processor's Association (GPA) Data Bank, 5<sup>th</sup> Edition delivers over 35 years of GPA research data for immediate, productive use in process simulation tools. Included is a completely re-mastered thermophysical property database with all 220 Research Reports and Technical Publications and powerful data fitting, correlation, and phase equilibrium software applications using the industry proven Dortmund Data Bank schema and software applications. The GPA Data Bank is over twice the size of previous versions and includes a significant amount of new VLE data for low-boiling hydrocarbons never before available in industry. The GPA Data Bank, 5th Edition was jointly developed by EPCON International and DDBST (developer of the popular Dortmund Data Bank and co-founder of the UNIFAC consortium). Learn how to quickly fit binary parameters using the GPA Data Bank with direct links to major process simulators to immediately improve your company's gas processing operations.

**Bio:** Dr. Kai Fischer: Over 20 years of practical experience in thermodynamics and co-founder of the Laboratory for Thermophysical Properties (LTP, Oldenburg, Germany). Todd J. Willman, PE: Over 25 years of experience developing simulation software tools for chemical engineers and co-founder of EPCON International (Houston, Texas).

## Meeting Registration Information

Pre-register for the monthly meeting at: <http://www.sts-aiche.org/register.php>.

Reservations are accepted until 4 pm the Tuesday of meeting week.

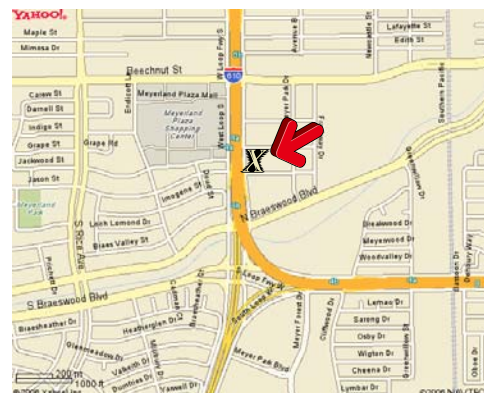
You may also **cancel a reservation** using this link. Please cancel your reservation if you have made one and find that you are unable to attend.

The cost for this meeting, per person, is:

	<u>Pre-registered</u>	<u>At the door</u>
Regular/Retired	\$25	\$35
Student/Unemployed	\$15	\$25

## Meeting Location - Aramco Services

The September meeting will be held at the Aramco Services Building. To use your own mapping program for directions, the address is 9009 West Loop South, Houston, 77096. Click on the map to the right to open the map site. The building is on the East side of the highway.



## Pre-Registration Procedure

The web address for meeting preregistration is <http://www.sts-aiche.org/register.php>. This will confirm that registration is still open, and direct you to the proper page. Preregistrations will be accepted until **4 pm** on the Tuesday of meeting week.

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## Calendar of Events—Upcoming Meetings

Meeting Date	Sponsor	Location	Dinner Speaker Topic	Workshops
September 4, 2008	Aramco Services	Aramco Services	Legal Impact of the BP, Texas City Incident	3
October 2, 2008	Environ	Hobby Hilton	Biological Waste Water Processing	Environ Seminar + 4
November 6, 2008	KBR	Crowne Plaza I-10 West	3D Engineering/CAD Systems	Energy in New Design Symposium
December 4, 2008	--	TBD	Family/Significant Other Night	None
January 8, 2009 <b>*2nd Thursday</b>	TBD	Westchase Hilton	Petrochemical Pricing	4
February 5, 2009	TBD	TBD	(Student Awards Night)	4
March 5, 2009	TBD	TBD	(Regional AIChE Trade show)	4
April 2, 2009	TBD	TBD	(Energy Forum)	Energy Forum
May 7, 2009	TBD	TBD	(STS Awards Night)	4





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## Environ Wastewater Treatment Seminar and Environmental Symposium

The South Texas Section of AIChE and ENVIRON International Corp. are hosting an Industrial Wastewater Treatment Seminar and Environmental Symposium at the Hilton Hobby Hotel (the dinner meeting location) on October 2, 2008 beginning at 9 AM. The seminar will last until 5 pm, in time for the pre-dinner workshops at 5:30 pm.

The seminar presenters include ENVIRON principals Carl Adams, Sam Shelby, Andy Edwards, and Pat Campbell—leaders in design and operational techniques for the Activated Sludge Process. The event will provide seven professional development hours (7 PDH) for professional license holders. Breakfast and lunch will be served and a day-long exhibition forum will take place simultaneously, featuring local environmental service providers and engineering firms.

The detailed description of the agenda, including speaker bios, may be found at

[http://sts-aiche.org/STS-ENVIRON\\_Technical\\_Program.pdf](http://sts-aiche.org/STS-ENVIRON_Technical_Program.pdf).

### PRELIMINARY TENTATIVE SCHEDULE

9 am	Introduction	
9:15-10:45	Expectations of Today's Activated Sludge Systems	Dr. Carl E. Adams, Jr., P.E. / Sam E. Shelby, Jr. P.E.
11-12:30	Comparative Overview Of Commercially Competitive Activated Sludge Configurations for Industrial Wastewaters	Dr. Carl E. Adams, Jr., P.E. / Sam E. Shelby, Jr. P.E.
12:30-1:30	Lunch (Included)	
1:30-2:45	Activated Sludge Treatment Plant Troubleshooting	Patrick J. Campbell, P.E.
3-4:30	Wastewater Operations Monitoring for Predicting Treatment Plant Performance	Andrew W. Edwards, P.E. / Janet F. McKinney, P.E.
4:30-5	Question and wrap up	

If you register on-line with the STS shopping cart by 11:59 PM on September 22, the price is \$80. Afterward, cash and checks only will be accepted at the door for \$120.

A 50% discount is available on all rates for students and government employees. Proof of IDs at the door will be required in order to redeem discounted rates; full at-the-door rate will be required otherwise. To obtain this discount, use the discounted item in the shopping cart.

Attendance for the exhibition only is FREE.

Register online using the STS online shopping cart:  
<http://www.sts-aiche.org/zen-cart/>.

Select **Seminars/Symposia**. If you need any assistance, please contact [creditcards@sts-aiche.org](mailto:creditcards@sts-aiche.org).

Please contact [liao.jotsu@gmail.com](mailto:liao.jotsu@gmail.com) for more information about the seminar.



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Accentergy is a recruiting company that represents leading Oil/Gas, Petrochemical, Pipeline and Manufacturing companies in the Houston area. Below are currently available positions with our clients. All positions are direct placement opportunities.

TITLE	JOB ID #	LOCATION
Senior Project Manager	1343	Houston or San Antonio, TX
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Senior I&E Design Coordinator	1731	Houston, TX
Design Supervisor	1401	Oklahoma City
Senior Facilities Engineer	1130	Houston, TX
Project Manager, Offshore Pipelines	1374	Houston, TX
Process Engineer	1251	Mont Belvieu, TX
Senior Electrical Engineer	1377	Houston, TX
Project Controls – Cost Coordinator	1488	Houston, TX
Construction Supervisor	1508	Deer Park, TX
Sr. Process Engineer	1455	Deer Park, TX
Reservoir Engineer	1468	Houston, TX
Drilling Engineer	1408	Houston, TX
SCADA Coordinator	1475	Houston, TX
SCADA Specialist / SCADA Analyst	1517	Houston, TX

To apply or obtain additional information about each position send a resume to [jobs@accentergy.com](mailto:jobs@accentergy.com).



## From The Editor

Welcome back, everyone! I hope you had a lovely summer. Are you ready for another year of great STS meetings? We have so much in store for you! The Executive Committee has been busy this summer arranging fall meetings and other events.

We begin with an engaging discussion of the legal aspects of the BP Texas City refinery explosion. Plant accidents are tragic events that bring our industry into community focus. But we don't often hear about all the legal happenings that occur long after the plant has been rebuilt and is once again operational.

Next month, prior to the October meeting, ENVIRON and the STS are hosting a day-long Wastewater Treatment seminar and Environmental Symposium. Details are available on page 5 and the website.

In November, there is an Energy in New Design Symposium—a different twist on the typical Energy Forum (to be repeated in April '09). This is geared directly toward E&C Companies, and is being held on the west side of town to ensure E&C company participation. My very own company KBR will be sponsoring this dinner meeting, so I am doubly excited to put this on my calendar.

The YP crew are also gearing up for exciting and fun events—remember these are open to all members!

There's much to do this fall with the STS. We hope to see you for at least one meeting or event! Welcome back once again.

Susan Cannon, Editor

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ADVANCED MATERIALS IN EUROPE

**DATE:** Friday, October 17, 2008  
**TIME:** 8:30 am to 1:00 pm  
**LOCATION:** Houston Technology Center  
410 Pierce St  
Houston, Texas 77002

## DETAILS:

The Belgian Trade Commission, through its Walloniatechprogram, ([www.walloniatech.org](http://www.walloniatech.org)) is hosting a seminar on advanced materials, including **nanomaterials**. **Wallonia**, the French speaking region of Belgium, is rapidly expanding in international markets with its development and manufacturing of new materials. Extensive expertise in this area has created solid **cooperation between businesses, research centers and universities**. Some of **the most prominent European material manufacturing companies** will share their strategies and ideas on this exciting technical and business challenge. Wallonia is already a recognized participant in this field and can provide significant business and technological collaboration benefits.

**While providing a comprehensive picture of the advanced material industry in Europe and the US, academic and industrial speakers will address the following questions:**

- *What is the technical and economic future of advanced materials and nanomaterial science in Europe?*
- *What are the principal “focus areas” of applied research in Europe?*
- *What are the main challenges facing the industrialization of nanomaterials in Europe and in the US?*
- *How can US companies benefit from existing European research and other European resources? What are the potential transatlantic synergies?*
- *How and where can US companies find competitive technical and industrial resources to complement or accelerate their international expansion in the sector of the nanomaterials industry?*
- *How can a US material-manufacturing company finance its expansion in Europe?*
- *How can a Small to Medium sized Business (SMB) approach international expansion “early-on” as they develop their business in the dynamic nanotechnology sectors ?*

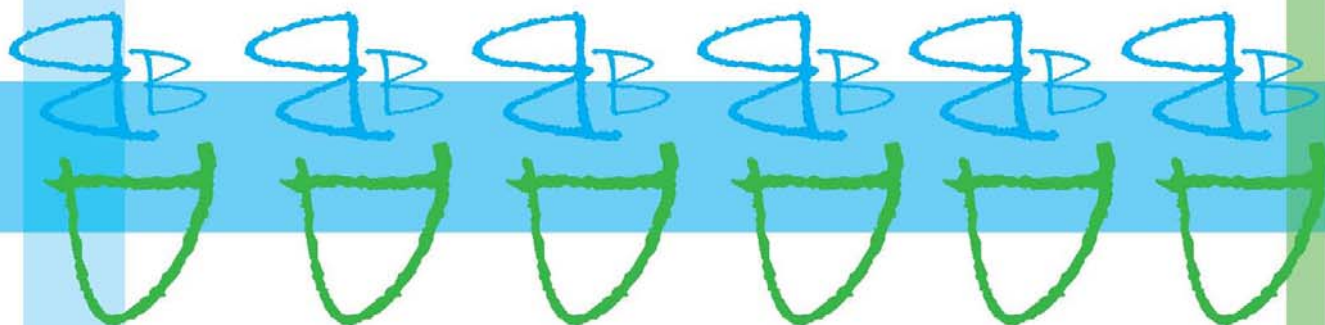
**RSVP :** Cost to attend: **\$25** - A catered breakfast will be provided

Registration and complete program details: log on to <http://www.houstontech.org/en/cev/?731>

or call 713-658-1750 (HTC) or 713-863 1110 (Belgian Trade Commission)

The registration deadline is Thursday, 16 October 2008, 5:00 PM (Central Time). Register today!





## AIChE Presents:

### Gulf Coast Butadiene Producers Symposium: Topics in Reliability

Sponsored by **Baker Petrolite**

Friday, October 10, 2008 • South Shore Harbour Resort and Conference Center

This symposium and associated exhibition allows attendees to discuss and learn about topics of interest to butadiene producers. Many opportunities to interface with other butadiene plant personnel in the region will be provided.

Symposium topics include: equipment design, feedstock concerns, reliability benchmarking and monitoring.

#### Agenda

8:30 a.m.	Pre-Registration
9:00 a.m. – 3:00 p.m. *	Presentation Sessions
3:00 p.m.	Q&A Forum

\*Lunch will be provided

#### Presenters

Baker Petrolite  
BASF  
KLM Technology Group  
Quantum Technical Services  
Solomon Associates

#### Cost

The Gulf Coast Butadiene Producers Symposium: Topics in Reliability, presented by AIChE and sponsored by Baker Petrolite, is complimentary for our invited guests and includes admission to the presentations listed on the Symposium agenda, as well as a continental breakfast and lunch.

All other expenses are the sole responsibility of the attendee, including overnight accommodations and incidentals.

#### Registration

**Pre-register for the Symposium by Friday, September 26th!**

It's quick and easy...simply complete and return the attached form to Jessica Clements by e-mail (Jessica.Clements@bakerpetrolite.com) or fax (+1-281-275-7218). Space is limited so register now!

#### Hotel Accommodations

South Shore Harbour Resort  
2500 South Shore Boulevard  
League City, Texas 77573

South Shore Harbour Resort has set aside a block of rooms for Thursday night, October 9, 2008. To reserve a room at the conference rate of \$120.00 per night, please contact the Resort at +1-800-442-5005 or +1-281-334-1000, extension 550, by Thursday, September 18, 2008.

When making your hotel reservation, be sure to reference "Gulf Coast Butadiene Producers Symposium" to get the \$120.00 per night rate.

## Registration Form

**Gulf Coast Butadiene Producers Symposium: Topics in Reliability**  
**Friday, October 10, 2008 • South Shore Harbour Resort and Conference Center**

**Registrations are due by Friday, September 26th!**

Please register me for Gulf Coast Butadiene Producers Symposium: Topics in Reliability, presented by AIChE and sponsored by Baker Petrolite.

Please indicate one: Dr. ☐ Mr. ☐ Mrs. ☐ Miss ☐ Ms. ☐

Last Name: \_\_\_\_\_ First Name: \_\_\_\_\_

Title: \_\_\_\_\_

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Phone: \_\_\_\_\_ Fax: \_\_\_\_\_ Email: \_\_\_\_\_

Are you a member of AIChE (please check one)? ☐ Yes ☐ No

Are you attending the Symposium in order to receive a learning credit (please check one)? ☐ Yes ☐ No

If you have a question you'd like the panel to consider addressing during the Q&A Session, please include it here:

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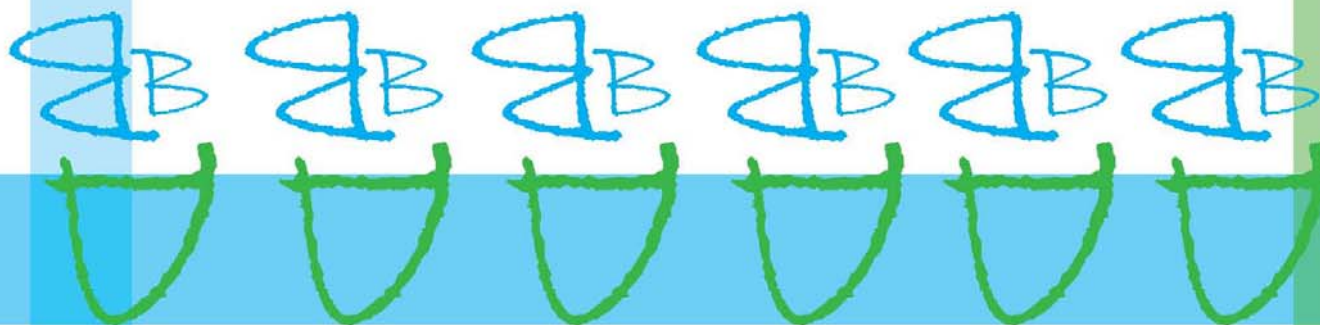
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Reminder! Overnight accommodations can be made by contacting South Shore Harbour Resort at +1-800-442-5005 or +1-281-334-1000, extension 550. In order to get the conference rate of \$120.00 per night, you must reserve your room by Thursday, September 18, 2008, and reference "Gulf Coast Butadiene Producers Symposium" when making your reservation.

**Please return completed form to Jessica Clements by e-mail ([Jessica.Clements@bakerpetrolite.com](mailto:Jessica.Clements@bakerpetrolite.com)) or fax (+1-281-275-7218).**

**Space is limited so register now!**





## Welcome new Environmental workshop chair

Welcome to our new Environmental workshop chair—Jotsu Liao of Shell—Deer Park.

In May of 2007, Jo Liao graduated from University of Colorado at Boulder with B.S. and M.S. in Chemical Engineering. Her academic concentration and research was in Tissue Engineering. Presently, she is working at Shell Deer Park facility in the Environmental Department as a permitting engineer/project reviewer. Within Shell, She is also a member of SEEDS (Shell Employee Encouraging Development for Sustainability). The network has project that raises environmental awareness within the organization as well as the surrounding community.

Jotsu takes over the role from Alessandra Carreon, who has accepted an office relocation to Seattle, Washington with Environ Corp. We extend our deepest thanks to Alessandra for her hard work in putting together the October seminar, and wish her the best of luck in cold Seattle!



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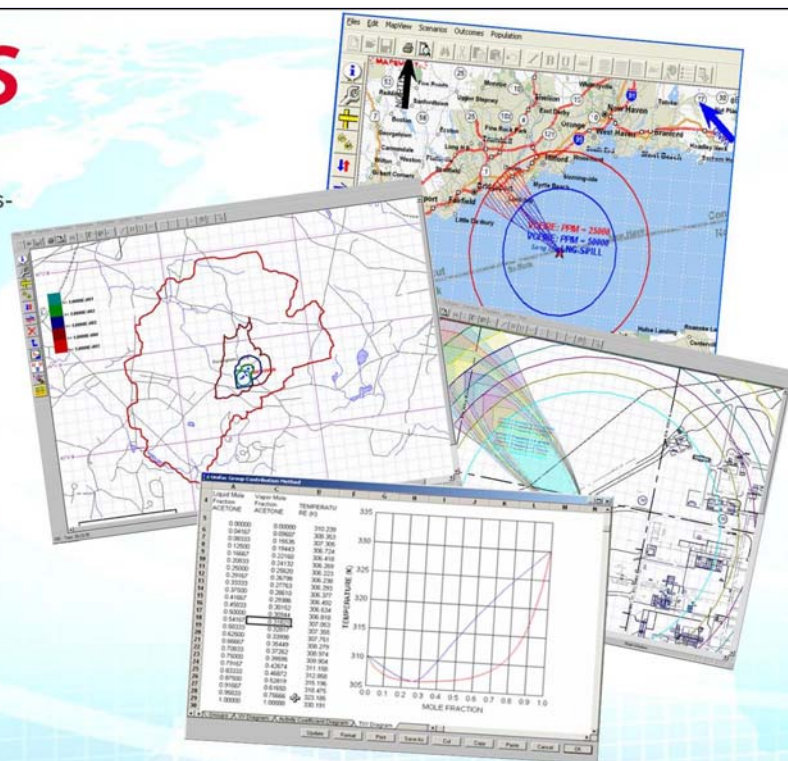
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## Vital Links

South Texas Section website: <http://sts-aiche.org>

South Texas Section Young Professionals Group: <http://yp.sts-aiche.org>

National AIChE website: <http://www.aiche.org/> (Needs Flash Plug-in)

Earn CEP credits at AIChE functions: [http://www.sts-aiche.org/Texas\\_PE\\_CEP\\_Rule.html](http://www.sts-aiche.org/Texas_PE_CEP_Rule.html)

Download the CEP log form: [http://www.sts-aiche.org/STS-AIChE\\_CEP\\_Log.xls](http://www.sts-aiche.org/STS-AIChE_CEP_Log.xls)

Previous Newsletters (PDF format): <http://sts-aiche.org/newsletterArchives.htm>

Link to THIS newsletter: <http://sts-aiche.org/newsletter/news2008/news0908.pdf>



# PETROLEUM REFINING ECONOMICS

OCTOBER 23-24, 2008 AT THE COLORADO SCHOOL OF MINES

*This course presents an introduction to petroleum refining economics. The focus is on transportation fuels refineries, however petrochemical production is also presented. The first part of the program includes an overview of crude oil and petroleum products. This is followed with a description of refinery process technology. Key refining technologies are described such as crude oil distillation, heavy oil conversion options, hydrotreating, and catalytic reforming. A case study for a new refinery project is presented, and includes capital costs, operating costs and project economics.*

*Although oil refineries have many similarities, each refinery is customized to most profitably supply a specific market. Therefore refineries vary in complexity. A discussion of refinery types, complexity and margins is presented. This is followed with an overview of biofuels, and how increasing biofuels production will impact the industry. Profitable refinery operations involve many economic decisions, such as crude oil selection, production planning and product blending. Another part of the program presents a discussion of key refinery planning applications. This includes an introduction to linear programming, which is widely used for economic decision-making.*

*The course will conclude with a discussion of how refiners increase profitability through strategic initiatives and operation excellence.*

## FURTHER INFORMATION

- Technical: Dave Geddes: davegeddes@comcast.net
- Registration: 303.273.3321, space@mines.edu

## CLASS OUTLINE

### Crude Oil

Crude oil reserves, production trends & key crude oil qualities for refiners.

### Petroleum Products

Product consumption trends and key specifications.

### Refinery Process Technology

Overview of process technology, with a focus on crude oil distillation and heavy oil conversion options. Other refinery processes are also covered.

### Refinery Project Economics

Typical steps in new refinery projects are discussed. This includes a case study including capital cost, operating costs, and project economics.

### Refinery Types, Complexity and Margins

The major categories of refinery complexity are described along with their impact on refinery product slate and profitability.

### Biofuels

Discussion of first and second-generation ethanol and biodiesel production.

### Economic Decision Making for Operating Refineries

Crude oil evaluation, production planning, product blending.

### Strategic Considerations for Refiners

How refiners gain competitive advantage via strategic positioning and operational excellence. This includes integration with petrochemical production such as aromatics and olefins.

## FOR WHOM INTENDED

In addition to oil refining personnel, other individuals who interact the industry will benefit from this course. This includes petrochemical producers, oil refinery suppliers, insurance, finance and engineers who have limited refinery experience. A technical background is not required for course participants.

## COURSE DIRECTOR

Dave Geddes is an economics and planning consultant for the refining and petrochemical industry. His experience includes 20 years at Bechtel Corporation. He has worked on feasibility studies and economic evaluations of oil refineries and petrochemical plants in the U.S., Asia, the Middle East, and South America. While at Bechtel he also managed the group that developed, marketed, and supported the PIMS linear programming system that is now widely used for refinery and petrochemical economic studies and other planning applications. Mr. Geddes received a B.S. in Petroleum Refining from the Colorado School of Mines, & an M.S. in Chemical Engineering from the University of Colorado.

## FEES & REGISTRATION

The registration fee is \$995 (US), which includes tuition, breaks, and text materials. It does not include meals or lodging. Enrollment is limited. Applications will be accepted in the order received. To register online, visit [www.mines.edu/outreach/cont\\_ed](http://www.mines.edu/outreach/cont_ed). CSM will award 1.3 CEU's for participation in this course.





## South Texas Section AIChE

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### *2008 Officers and Contact Information*

#### Officers

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**Membership** Jerry Gresham, Gresham & Gresham

**Young Professionals** Hui Zhao, KBR

**Awards** Tom Menn

#### SOUTH TEXAS SECTION MISSION STATEMENT

As a section of AIChE, we serve chemical engineering professionals in the South Texas region through education, professional development, and networking.

#### Vision 2008

We will become an organization with a strong and active membership. We will accomplish this through:

1. Increasing awareness of the South Texas Section of the AIChE
2. Improving relevancy of our programs
3. Improving our governance
4. Hospitality/Welcoming/Social

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WHAT DO YOU THINK OF THE NEWSLETTER? We want to know!

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