

# The South Texan

2003 Marx Isaacs Award for Outstanding Large Section Newsletter



## Special Notes

- **Location: Aramco Facility**
- Workshops 5:30 PM-6:30 PM
- Networking 6-7 PM
- Dinner 7 PM
- Speaker 8 PM
- Done promptly at 9 PM

## Monthly Meeting November 2, 2006

**Sponsored by Aramco Services Company!**

### Saudi Aramco Downstream Development

**Abstract:** The presentation provides an overview of Saudi Aramco activities in downstream development. The increased growth in refined and petrochemical products has led Saudi Aramco to consider various initiatives to develop its downstream business. In the current domestic arena, Rabigh Refinery Development, a major 400,000 barrels per day refining and petrochemical complex, is in the construction phase.

Other refining and petrochemical initiatives in the early planning and engineering phase include two 400,000 barrels per day export-oriented refineries and a petrochemical complex integrated with the 550,000 barrels per day Ras Tanura Refinery. In addition, Saudi Aramco is actively pursuing technical, research and commercial development in oil desulfurization, product quality and process unit improvements.

**Bio:** Khalid A. Hamid is the head of Saudi Aramco's Manufacturing Planning Division. His career with the Company covers over 20 years of downstream engineering and planning experience.

For more information on the topic and speaker, see page 4.

The November meeting will be at the Aramco facility. See map on page 3. Please note that the building is on the EAST side of the loop.

Special pricing is in place for this meeting due to Aramco's sponsorship:

	Reserved	@Door
Students	\$5	\$10
Unemployed	\$5	\$10
Retired	\$7.50	\$12.50
Regular	\$10	\$15

*The Ethics Seminar is priced separately, and no discounts are available.*

The meeting price includes beverages during the workshops, refreshments during the social hour, dinner, and dessert/coffee during the speaker. Non-alcoholic beverages are provided.

Register now! <http://www.sts-aiiche.org/sts-aichereservations.htm>

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## November 2006 Workshops (More detail, see page 2)

<b>CAST</b>	No workshop this month. Attend the <b>Ethics Seminar</b> instead! See details Page 3.	
<b>PSM</b>	An Effective Management of Change (MOC) System	Jack Chosnek, PhD, PE, KnowledgeOne
<b>PE/PO</b>	Gamma Scanning to Troubleshoot Process Operations	Chris Scheffler, Tru-Tec/Tracerco
<b>Environmental</b>	The challenges of purchasing and maintenance of Air Pollution Control Technologies	Gabriel Garcia, Founder of PollutionTech

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

### Process Safety: An Effective Management of Change (MOC) System

**Speaker:** Jack Chosnek, PhD, PE, KnowledgeOne

**Abstract:** Are you capturing all the changes in your organization? Are those changes being properly reviewed and correctly analyzed for safety impact? A good description of the technical basis of the change and a good safety analysis of its impact are only the beginning of an effective MOC system. Training of company personnel to recognize what is a change, temporary or permanent, and having a workflow to analyze, review, approve, implement, and capture the details of the change is the second step.

But having management oversight and metrics that can help management take the pulse of the system are the key to the effectiveness. Part of these metrics are the number of MOCs that are open at any one time, past due MOCs and those that are going to become due soon, differentiating between permanent and temporary changes for all of them. These elements will be discussed and a database that can help manage such system will be shown.

**Bio:** Jack is a PSM consultant with over thirty years of experience in the petrochemical industry. He started his career with Celanese Chemicals where he successfully implemented OSHA 1910.119 and managed process safety at Celanese's largest site. He was part of the corporate steering team that developed the Company's PHA, Risk Assessment/Risk Management, Process Safety Audits and Incident Investigation programs.

He has consulted for companies in the chemical, oil and gas, waste management and mining industries, developing policies and implementing process safety management systems, facilitating PHAs, writing operating procedures, investigating incidents, and conducting process safety audits. He has developed software for PHA facilitation and Management of Change (MOC). Jack has a BS and MS from the Technion—Israel Institute of Technology, and a PhD from the University of Missouri at Rolla, all in Chemical Engineering.

### Process Engineering/Plant Operations (PE/PO): Gamma Scanning to Troubleshoot Process Operations

**Speaker:** Chris Scheffler, Tru-Tec/Tracerco

**Abstract:** Chemical Engineers have historically relied on measurements such as flow rates, temperatures, and pressures, and model or simulation results to troubleshoot distillation and separation processes. New services exist that provide real-time information on how process equipment is actually operating.

The most common application of the sealed source tests is gamma scanning. This test is primarily applied, but not limited to, distillation or separation columns. Gamma scans provide a density profile of the internal process of operating distillation columns and other process vessels. The density profile can be used to diagnose operating conditions such as damage to internals, flooding, degree of entrainment or weeping, liquid levels on trays and distributors, liquid distribution through packed beds, etc. The presenter will show several case studies where scanning revealed vital process information that helped solve an operating problem, or helped make a revamp/re-design successful.

**Bio:** Chris Scheffler has been with Tru-Tec/Tracerco for 10 years. Chris has previously held positions of Project Coordinator where he led scan and tracer projects, and assistant Radiation Safety Officer. Chris now has the position of Technical Advisor for Texas.

### Environmental: Discussion of the challenges with purchasing and maintenance of Air Pollution Control Technologies

**Speaker:** Gabriel Garcia, founder of PollutionTech

**Abstract:** Air Pollution control is one of the most demanding and costly additions to the process. Control equipment is costly, adds little or no value to the end-product, and can cost hundreds of thousands of dollars in operating expenses. As fuel costs increase, Utility Groups, Unit Engineers, and Upper Management are continuously looking for increasing performance, capacity, and operating efficiency. Unfortunately for Air Pollution equipment, higher efficiency does not directly result in optimal efficiency or even reduced operating costs.

The misconception of higher efficiency coupled with high non-compliance penalties leaves the end-user purchasing an over-priced guarantee impacting production and operating costs. PollutionTech's founder Gabriel Garcia will discuss the challenges encountered when purchasing Air Pollution Control Technologies and how to properly model, adjust, or replace abatement equipment.

**Bio:** Gabriel Garcia is a veteran of the air pollution technology industry. Founder and owner of PollutionTech, a simulation, design, and procurement software aimed at optimizing the abatement equipment for each application. Previously, he was a lead engineer at Epcon Industrial Systems, where he created design programs aimed at quickly and accurately determining the optimal design parameters for air pollution control technologies.

Gabriel holds a Masters in Business Administration and a Bachelor of Science in Chemical Engineering both from Rice University. He is closely involved with Rice University, working with the engineering department in a joint effort to develop new simulation tools for the industry while exposing young engineers to the challenges they will face.

## Dinner Registration Information

Make your dinner reservation online at:

<http://www.sts-aiche.org/sts-aichereservations.htm>

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

You may also **cancel a reservation** using this link.

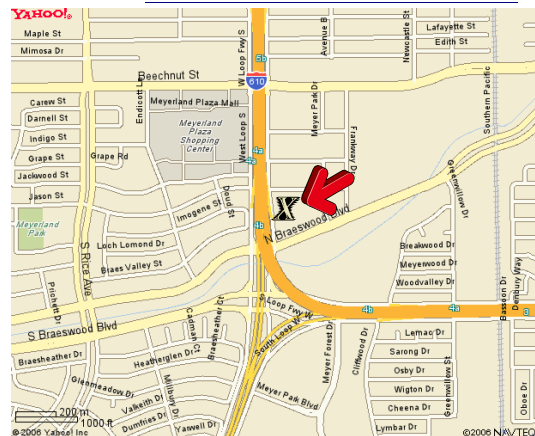
Please cancel your reservation if you have made one and find that you are unable to attend.

*Attendees of the meeting will earn 1 PDH for the Texas Professional Engineer Continuing Education Programs. Remember to track your hours!*

## Meeting Location - Aramco Facilities

The November 2 meeting will be held at the Aramco Facilities. To use your own mapping program for directions, the address is 9009 West Loop South, Houston, 77096.

Click on the map to open the map site.



## Ethics Seminar: Ethics and Excellence (Held in place of the CAST workshop at 5:30 PM)

**Speaker:** Alan Rossiter of Rossiter and Associates

**Abstract:** Beyond the basic technical competencies our discipline, what are our priorities as engineers? This seminar explores this question, and thus establishes the foundations of professional excellence. It also examines codes of ethics for engineers, and discusses their role in defining the ways that we conduct ourselves as engineers.

**THIS SEMINAR IS DESIGNED TO SATISFY THE CONTINUING EDUCATION ETHICS REQUIREMENT FOR TEXAS PROFESSIONAL ENGINEERS.**

Please note: **This session has a \$15 admission fee.** It is payable at the door.

This session also **requires pre-registration.** Please register at: <http://www.sts-aiche.org/2006EthicsSeminar.html>.

**Bio:** Alan Rossiter is President of Rossiter & Associates (4421 Darsey Street Bellaire, TX 77401, Tel: 713-660-9503; Fax: 713-669-1987 E-mail: [alan@rossiters.org](mailto:alan@rossiters.org)), a process improvement consulting company working primarily in the field of industrial energy efficiency. He received his B.A., M.Eng. and Ph.D., all in chemical engineering, from the University of Cambridge, England. He has more than 25 years of process engineering and management experience, and more than 50 publications. He is a chartered engineer, a registered professional engineer (Texas), and a member of the AIChE.

*Alan holds the position of STS Executive Committee Position 4, Human Resources. —Ed.*



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## November Meeting Dinner Speaker

### Saudi Aramco Downstream Development

**Abstract:** The presentation provides an overview of Saudi Aramco activities in downstream development. The increased growth in refined and petrochemical products has led Saudi Aramco to consider various initiatives to develop its downstream business. In the current domestic arena, Rabigh Refinery Development, a major 400,000 barrels per day refining and petrochemical complex, is in the construction phase. Other refining and petrochemical initiatives in the early planning and engineering phase include two 400,000 barrels per day export-oriented refineries and a petrochemical complex integrated with the 550,000 barrels per day Ras Tanura Refinery. In addition, Saudi Aramco is actively pursuing technical, research and commercial development in oil desulfurization, product quality and process unit improvements.

Saudi Aramco operations cover a wide range of activities related to oil and gas in the upstream, midstream and downstream sectors. These activities include domestic oil and gas exploration and production, crude oil stabilization and gas processing, refining and domestic product distribution as well crude oil and refined product export. Supporting these activities is an extended network of pipelines and pump stations.

Focusing on the downstream business, Saudi Aramco currently operates five domestic refineries, and manages two domestic joint venture refineries. The refining business in the Kingdom started in the early 1940s with an initial capacity of 3,000 barrels per day and has grown over the years to process in excess of two million barrels per day of Arabian crude oil. Twenty bulk plants, located in various regions of the Kingdom, complement the refining system in facilitating product distribution of over one million barrels per day to the domestic market. In addition, Saudi Aramco is involved in several international refining joint ventures in the U.S., South Korea, the Philippines and Japan.

Saudi Aramco has embarked on strategic imperatives which emphasize its corporate role, both as a commercial and national entity, to increase revenues and develop the local economy. Also, the increased growth in the refined and petrochemical products has led Saudi Aramco to consider various initiatives to develop its downstream business. As a result, several revenue generating growth programs in downstream, including integrating existing refineries with petrochemicals, and new refineries, are being pursued with international partners. Rabigh Refinery petrochemical integration is underway and in the construction phase. Two new export-oriented full conversion refineries are in front-end engineering. Two other domestic refineries are being considered for petrochemical integration and are in various stages of development.

In addition, Saudi Aramco is pursuing imperative-related research and development programs to enhance the use and value of hydrocarbon resources. These programs include crude oil desulfurization, petroleum fuel combustion, clean petroleum fuels, sulfur utilization, refinery process unit enhancement, catalyst development, and carbon dioxide management. These activities will transform Saudi Aramco into a world class integrated company, making it the home of a highly talented and motivated workforce.

**Bio:** Khalid A. Hamid is the head of Saudi Aramco's Manufacturing Planning Division. His career with the Company covers over 20 years of downstream engineering and planning experience. Khalid worked in the Ras Tanura Refinery in Saudi Arabia and the Delaware City Refinery, where he was involved in facility operations and engineering studies.

He has also held several management positions on the Corporate Facilities Planning Organization, overseeing downstream investment development in the refining, product distribution and export terminal areas. Khalid led several major studies, including the Corporate Petrochemical Strategy and the initial Rabigh Refinery Development. He has also been heavily involved in Saudi Aramco's process facilities master plans, refinery upgrades and overall investment strategies.

Khalid holds a BSc. Degree in Chemical Engineering from the University of Pittsburgh (1986) and a MSc in Chemical Engineering from Texas A&M University. (1990).



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## Volunteer Opportunities

Would you like to volunteer to help out with South Texas Section AIChE activities?

Our Volunteer Coordinator is Matt Kolodney, and he knows about all the possible ways you could help out with your professional organization.

Please phone Matt at (713) 767-3752 or by email at [mkolodne@tceq.state.tx.us](mailto:mkolodne@tceq.state.tx.us).



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## 2005 AIChE South Texas Section Best Paper Awards

Dr. Chen E. Ramachandran of CRI/Criterion (Shell Brookhollow) chaired the team of reviewers that selected the 2005 Best Fundamental and Applied Papers. Members of the team were as follows:

Joe Alishusky	Smita Edulji	Shilpa Damle-Mogri
Manish Bharati	Ann Lauritzen	Priyam Sheth
Franklin Caputo	Lorna Ortiz-Soto	Sue Degaleeson
Pierre Carrette	Max Ovchinnovich	Ernesto Uehara
Les Chewter	Mike Reynolds	Eduardo Dozal
Jingyu Cui	John Roble	David Wallace

A total of ten papers were reviewed. One paper is an on-line publication and another is a chapter of a textbook which was published in 2005. The STS Best Paper Awards were presented at the October South Texas Section-AIChE dinner meeting at the Westchase Hilton. The papers reviewed were:

*The Use of Heat Transfer Fluids in the Synthesis of High-quality CdSe Quantum Dots, Core/shell Quantum Dots, and Quantum Rods*  
*Stationary Transversal Hot Zones in Adiabatic Packed-Bed Reactors*  
*Carbon Combustion Synthesis of Complex Oxides: Process demonstration and Features*  
*Designing Pd-on-Au Bimetallic Nanoparticle Catalysts for Trichloroethene*  
*Hydrodechlorination Stationary transversal hot zones in adiabatic packed bed reactors*  
*Genetic/quadratic search algorithm for plant economic optimizations using a process simulator*  
*Lessons Learned: Batch Processing, Scaleup from Laboratory to Plant*  
*A new modeling approach to the effect of antimicrobial agents on heterogeneous microbial populations*  
*Advanced process control cuts offshore production constraints*  
*Make Your Plant More Energy Efficient*

The 2005 STS Best Fundamental Paper was **"Stationary Transversal Hot Zones in Adiabatic Packed-Bed Reactors"** authored by G. Viswanathan, **Dr. Dan Luss** (*University of Houston*), A. Bindal, and J. Khinast. This paper was published in the **AIChE Journal**, Vol. 51, No. 11, pp. 3029-3038. (*Authors who were STS members in 2005 are indicated in bold.*)



Dr. Dan Luss receives the Best Fundamental Paper Award from Larry Chriswell, Chair of STS.

The 2005 STS Best Applied Paper was **"Designing Pd-on-Au Bimetallic Nanoparticle Catalysts for Trichloroethene Hydrodechlorination"** authored by Drs. **Michael O. Nutt** (Custom Catalytic Solutions), Joseph B. Hughes, and **Michael S. Wong** (Rice University). This paper was published in **Environmental Science and Technology**, Vol. 39, pp. 1346-1353. (*Authors who were STS members in 2005 are indicated in bold.*)



Larry Chriswell, STS Chair, presents the Best Applied Paper Award to Dr. Michael Nutt and Dr. Michael Wong.



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## 62nd Southwest Regional Meeting of the American Chemical Society October 19

The 62<sup>nd</sup> SouthWest Regional Meeting of the American Chemical Society will be held October 19-22, 2006 at the [Houston Westchase Marriott Hotel](#) (formerly the Adams Mark Hotel).

It will be hosted by the [Greater Houston Section](#) of the [American Chemical Society](#). For more details, visit the website at <http://www.chem.uh.edu/swrm06/>.

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## Young Professionals Outing October 24 at HMNS

A Young Professionals social evening is planned by the Engineering, Science, and Technology Council of Houston (ECH) at the Houston Museum of Natural Science on October 24. Young Professionals include members up to ~35 years of age.

The exhibition "Benjamin Franklin, In Search of a Better World" is featured at the museum. The gathering will be followed by a reception with light deserts in the Arnold Space Science Hall and a sneak preview of the new projection system in the Burke Baker Planetarium.

This is the first of a few joint meetings for young members between several organizations in the Houston area. We hope that one or two meetings organized by ECH will show the Young Professionals the benefits of joint meetings, and that a joint committee of young professionals will ultimately be created.

Go to the ECH website for more details: <http://www.echhouston.org/en/cev/?23>, and for more information on the museum, visit their website: <http://www.hmns.org>.

STS NOTE: Susan Kerr and Peter Strasser are now co-chairs of the Young Professionals Group.

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## Engineers' Week coming February 2007

Engineers' Week is coming February 18-24, 2007.

Engineers' Week is an annual event sponsored by the Texas Society of Professional Engineers. The local Houston chapter organizes the myriad of events that are held throughout the week. It is a great opportunity to meet with other engineers, not just chemical engineers, in the local area, and have a great time as well.

Information about the events for the week will be posted on the South Texas Section website as it comes available. For a review of last year's events, visit their website at <http://www.tspehouston.org>.

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## 2007 Spring National AIChE Meeting—Call for Presentations

The Spring 2007 National AIChE meeting will be held in Houston April 22-26, 2007. Division 12, "Process Development," of the AIChE is actively recruiting practicing plant and process chemical engineers to participate in this meeting and in the national organization. Section D, "Manufacturing," of Division 12 is sponsoring the following sessions at the Spring 2007 National AIChE meeting at Houston:

1. To Toll or Not to Toll: That Is the Question
2. Trace Chemistry Contamination at Production Plants
3. Heat Exchanger Fouling: A Messy Business
4. Process Safety and Runaway Reactions

The goal of these sessions is to provide a forum for discussing common plant problems and for identifying practical solutions to such problems.

Jon Worstell, chairperson of "Manufacturing," is currently recruiting presentations for the above sessions. Please contact him at [Jon.Worstell@Shell.com](mailto:Jon.Worstell@Shell.com) or 281-544-7907 for details about these sessions.

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## From the Editor

I recently had an experience that taught me an important lesson about expectations.

I was in a situation to get my blood pressure taken. Most of my life, it has been 120/80. I have found it amazing that each time my blood pressure has been read, it has been exactly 120/80. Never anything else. I considered that a good sign. My husband has borderline high blood pressure, so we got a home blood pressure test kit to monitor him. I would test mine on occasion, and found that it was at times lower than 120/80. With my recent mishap, I was very weak and found my blood pressure to be quite low—90/60 at times. When I went to the doctor's office, the nurse taking my vitals read my blood pressure as, again, exactly 120/80. I had taken along my home test kit and after she left the room, I took it myself. It was 100/70. The doctor came in, and I told her about it, and she took my blood pressure. She read 100/70.

Doctors will say that home test kits aren't reliable, but I have found them to be more reliable than many humans. Humans often see exactly what they think they *should* see. Point in the air at nothing and make a big deal about "Don't you see that?" and half the crowd that gathers will swear they see what you claim to be pointing at. They think they should. So they do.

This writing is not about blood pressure, or even manual reading vs mechanical ones. It is about expectations. I am mindful of the saying "When all you've got is a hammer, every problem starts to look like a nail." I strive to review problems for their own merit, and not how I expect them to be. I have tried to apply solutions that were appropriate to the situation and not just the same thing that I had done time after time.

I think this is a lesson for everyone, especially in the engineering business. How many times have we applied a "typical" solution without fully analyzing the problem? Is the solution really valid, or is it just a quick fix because we are in a hurry? Am I reading blood pressure as 120/80 because that is what it is, or because that is what I expect it to be?

We all know the dangers of applying incorrect or hasty solutions in our industry. We must be diligent about seeing what really is there and not what we want to be there, and not just at work.

Susan Cannon, Editor

[SusanCannon119@aol.com](mailto:SusanCannon119@aol.com) or [newsletter@sts-aiche.org](mailto:newsletter@sts-aiche.org)

*Submit an article or idea! Include your name and contact information (phone, email, or fax). Anonymous submissions will not be accepted. Your company name may be omitted if you prefer. Entries may be edited for length and content (grammar, punctuation, etc.).*

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EOE/m/f/h/v

## Calendar of Upcoming Events

Mark your calendars! All information is subject to change as the year progresses.

Date	Tentative Location	Tentative Speaker	Tentative Subject
December 7	Greenway Plaza/Sig. Other Night	Jack Bacon	Chem Eng/Engineering In Space
January 11, 2007	Saudi Aramco Building	Murray Nadler	Patent Law
February 1	Clear Lake Hilton		
March 1	Brady's Landing		
April 22-26	George R. Brown Conv. Ctr.	<b>National Meeting</b>	State of the Union/Ship Channel Tour
May 3	Sheraton Brookhollow	Awards Night	

### Vital Links

Main South Texas Section site: <http://sts-aiiche.org>

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

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

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

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

Link to THIS newsletter: <http://sts-aiiche.org/newsletter/news2006/news1106.pdf>

# South Texas Section AIChE

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2006 Officers and Contact Information

## Officers

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## Executive Committee

### Position 1: Education

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David Silarski

**Membership** Jerry Gresham, Gresham & Gresham

**Young Professionals** Susan Kerr  
Peter Strasser

**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

*The South Texan* is issued monthly, except June, July and August, by the American Institute of Chemical Engineers, South Texas Section. Opinions expressed are those of the authors and not of AIChE. The newsletter is published electronically.

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<https://www.memberconnections.com/olc/pub/CHM/>

To update your information, log in, then select [Member Directory](#).

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Contact the New York office for PERMANENT ADDRESS CORRECTIONS:



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## The South Texan Newsletter Crew

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