



The South Texan

VOLUME 101 NUMBER 1

SEPTEMBER 2000

SEPTEMBER MEETING THURSDAY • SEPTEMBER 7, 2000

Speaker: Kenneth Agee, Chairman/CEO
Syntroleum Corporation, Tulsa, OK

Focus: *Gas to Liquids. GTL. The chemistry to convert natural gas into liquid hydrocarbons has been known since the early part of the 20th century. It has only been used, though, by nations that have not had free access to the world oil markets: Germany and South Africa. Although many companies have spent hundreds of millions of dollars researching this technology, the process has been only marginally economical to date. In the last twelve years the Syntroleum Corporation has developed several improvements to GTL and is now designing a world scale facility that will be build on Australia's West Coast.*

In our September meeting, Ken Agee will discuss the Syntroleum GTL Process and what makes its capital and operating costs lower than other technologies. In addition, he will discuss some of the history of the Syntroleum Corporation which he founded twelve years ago.

More about our Speaker see page 3



Meeting Location

**RADISSON
ASTRODOME HOTEL**
(Kirby at South Loop)

WORKSHOPS

(NO FEES - NO RSVP) 5:30-6:30 p.m.

EXECUTIVE COMMITTEE 5:30-6:30 p.m.

SOCIAL PERIOD 6:00-7:00 p.m.

DINNER 7:00-7:45 p.m.

PRICE \$ 20.00 - with reservation
22.00 without reservation

Students and Unemployed 1/2 price

MEETING / SPEAKER 7:30-8:30 p.m.

AUTO - R.S.V.P.

By 4:00 p.m Tuesday, September 5th

Call (281) 474-1626

WORKSHOPS

BRABOS 1 **CAST**

Topic: "Web-Enabled Industrial Desktop to Increase Overall Process Effectiveness in Metallurgical Plants"

Speaker: Osvaldo A. Bascur, OSI Software, Inc.,
Houston, TX.

Focus: Large metallurgical complexes have lots of data and much of it is "real time," changing rapidly as internal and external conditions evolve. This paper refers to the data hierarchy and analysis methods required for profitable plant operations. Continuous improvement with an innovation loop fueled by data collection and analysis methods emerges as the

Continued on page 3

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Wayne Fischer, M. D. Anderson

713-794-4340 • wfisher@mdanderson.org

PROCESS SAFETY

PELOS 1

Topic: "Human Factors and PSM"

Speaker: Dr. Henry Romero, Corporate Ergonomist
Halliburton

The presentation will include an introduction to human factors engineering, human centered design issues, and application of human factors in the PSM program and., more specifically, in process hazard analyses.

Contact: Skip Early, Early Consultants • 281-558-5418

PROCESS ENGINEERING PLANT OPERATIONS

BRABOS 2

Speaker: Mr. Kurt Diekroeger, Regional Sales Manager
CONMEC

Focus: CONMEC specializes in the re-rate and repair of turbomachinery parts, refurbishment of existing equipment and repair of in-service rotors for centrifugal compressors, steam

Continued on page 3

Contact: Jim Morris • 281-358-7986

PELOS 3 GOVERNMENT INTERACTION & PROFESSIONAL DEVELOPMENT

Topic: "Joint Workshop on Professional Engineering Firm Registration Strategy"

Focus: Elsewhere in this newsletter is an article by Norman Carnahan discussing the new requirements for engineering "firms" to register and pay an annual fee (aka TAX) to the Texas Professional Engineers Board. The Government Interaction Committee and the Professional Development Committee will be holding a workshop to discuss the issues raised by the new law and develop a strategy for the obtaining legislation in 2001 to remedy the current situation. Please check the room assignments in the hotel lobby and feel free to drop in to join us.

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The Purpose of the Section, a nonprofit scientific, educational and charitable organization, are the furtherance of the aims and purposes of the American Institute of Chemical Engineers, and the advancement of the science of chemical engineering and of related sciences through (i) the education of members and non-members in the sciences (ii) career guidance and financial assistance to students of the sciences and (iii) encouragement of research in the sciences.

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From the Chair



Welcome back from the summer break. The fall has traditionally been a time for me to look back at the goals I set for the year and make an assessment of successes and where adjustments need to be made. Hence, I would like to reflect on some of the key initiatives and accomplishments for the section thus far.

In an attempt to attract more of you to our meetings, we had a wide variety of programming for our monthly meetings. We figured that if we continued with our traditional program, we would only attract the same crowd. Consequently, we started the year with a joint meeting with the ACS and listened to a brilliant presentation by Dr. Malcolm Gillis, Rice University President. We followed that with a joint meeting with the student chapters at the University of Houston. Several of our members participated in activities related to that student conference over that weekend of February the 4th. In March we had a panel discussion on ethics, and in May we had a beer tasting, a very social event which was atypical of monthly meeting formats of the recent past. This, incidentally was our most attended event in recent history. In April, as has been traditional, we held our awards night and were addressed by the Chair of the national AIChE section, Bruce Finlayson. In May, we had the ever popular Houston ship channel boat tour. For those of you who are used to the typical format, this was probably an unpopular scheme. However, understand that the goal here was to attract more members and not just satisfy the same regular audience. We would like to hear from you, particularly those of you who are not regulars at our monthly meeting, regarding which of these programming items you preferred.

In the area of goals and objectives, we resolved our 1998 income tax late filing penalty and filed our 1999 income tax on time. We settled our financial obligations with the 1994 PPSS and participated in the Engineers' week activities in February (Perhaps you saw our very own Andrew Wilson featured in the Houston Chronicle as the AIChE young member of the year as part of the engineers week activities). We awarded about \$4000 in scholarships to students in area colleges. A display booth was purchased for the section with a grant from the national organization. It made it's maiden appearance at the March monthly meeting. Those of you who attended the Chemical Engineering Expo at the George R. Brown, hopefully stopped by the STS booth to see it. We reviewed and approved a position paper on the TNRCC SIP, recommending among other things that the agency look critically at non-industrial sources of air pollutants. We made some changes to the newsletter and hope that you have noticed the difference. Thanks Gary, Cathie and everyone at Holly Pro. We issued a CD based on the popular refinery fundamentals course. Financially, the section remains in good standing, spending about as much money as it takes in from membership dues.

For the balance of the year, our focus will be on enhancing the Web site, and on professional development issues.

Hopefully, this brief update has given you a feel for the administrative activities of the section. As always, if you need more detail, contact one of the members of the executive committee.

Chris Tagoe

AIChE -South Texas Section

WORKSHOPS

CAST (Continued from page 1)

best method for active decision-making and collaboration between diverse teams. The real-time access to plant via the Web opens a new paradigm for collaboration between internal and external resources. The data hierarchy provides with a blue print for transformation of data into actionable information.

PROCESS ENGINEERING

PLANT OPERATIONS (Continued from page 1)

turbines, gas turbines, axial flow compressors, steam turbines, gas turbines, axial flow compressors and hot gas expanders. Compression of large volumes of gas is major unit operation in the Gas to Liquids Technology being presented at this month's dinner meeting. Additionally, chemical, petrochemical and refining companies are continually seeking means to increase their production with limited budgets, requiring that the capacity of existing rotating equipment be stretched to the maximum. This workshop on centrifugal compressor re-rates and re-designs covers the limitations that exist in this type of equipment, and the considerations that an aerodynamicist gives to each re-rate design. These considerations apply as well to new centrifugal compression equipment.

The Editor Speaks

It definitely has been a long, and very hot summer here in South Texas. Hopefully, we'll see relief this month from the oppressive heat and humidity and maybe have some much-needed rain.

On behalf of the officers, committee chairs, and your fellow members, I welcome you back to our South Texas Section of the AIChE. If you are a new member, my handshake goes out to you along with a big Texas welcoming and hope that you will not only attend our monthly meetings, but also contribute fresh ideas and participate in one or more of our many committees.

A few weeks ago, I heard a very well-received presentation along these same lines. The speaker said that all of us must develop "I disease" if we are going to survive as a group: (1) We must Invite others to come to our meetings, (2) We must become Involved and participate, (3) We must seek continuous Improvements, and (4) We must Insist that we will settle for no less than being the best.

Let's make this the year that all of us become more involved with STS AIChE. If we try hard enough, we can set new records in membership attendance. If we put our heads and hearts together, we can develop new ideas that will propel our Section forward. And if we support and help our officers and fellow members, we can be no less than the best. Let's make it happen!

Gary Congram

CAST

Our May workshop featured Mr. Vasant Patel and his talk discussed the basics of linear programming in oil refining applications. It was a very good talk. I apologize for the inconvenience and confusion we had with respect to our meeting room at the May workshop. We got bumped due to a shortage in the number of workshop rooms. Thanks to Laura Gimpleson for sorting it all out and getting us a room. I understand that our turn-out may have been affected by the room problem (or the lack thereof!!), and the bad weather we had on that day!!

We start our 2000-2001 season with a talk by Mr. Osvaldo Bascuro who is a Sr. Industry Manager with OSI Software, Inc. His duties include consulting, design and implementation of enterprise plant information systems. His contributions have been in the design of a blue print for strategic enterprise information systems. Experience includes work as process control supervisor with Duval Corporation and staff engineer for Pennzoil Products Company. During his career he has been involved in the analysis, simulation, control and optimization of industrial plants. He holds dual BS degrees in chemical and metallurgical engineering from the University of Concepcion, and a Ph.D. specializing in process control and optimization from the University of Utah. He is active member of AIChE, SME, ISA, AISE, ASME and ATCP.

The CAST division of the AIChE covers all areas of computing and systems technology as applied to chemical process industries. We are still looking to fill up our 2000-2001 schedule. Please contact either Wayne or myself if you or anyone you know would be interested in making a presentation to the CAST audience. Also, feel free to contact us if you have any suggestions or ideas to improve the workshop or increase its value to the CAST group. We are very interested in hearing from you.

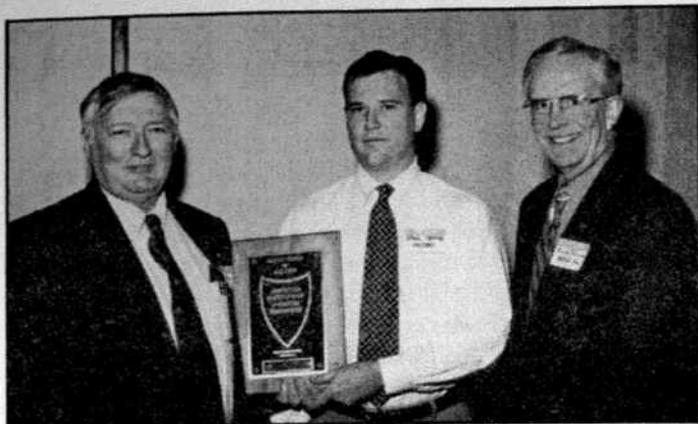
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Speaker (Continued from page 1)

Ken Agee is Syntroleum's Chairman and founder. Prior to starting Syntroleum, he spent 25 years developing a diverse background in both crude oil refining and natural gas processing while working at Texaco, Cities Service and Transok. He subsequently invested 13 years researching Fischer-Tropsch technology and applications, including the last 12 years as full-time CEO at Syntroleum. Mr. Agee is a licensed professional engineer and holds a BS in chemical engineering from Oklahoma State University. He is the inventor on two US patents related to natural gas conversion, as well as several non-US patents, all of which are owned by Syntroleum.



Paul Temme (center) receives the 1999 South Texas Section Outstanding Young Member Award as AIChE President Bruce Finlayson (right looks on).

PAUL TEMME

1999

SOUTH TEXAS SECTION - AIChE OUTSTANDING YOUNG MEMBER

The 1999 South Texas Section Outstanding Young Member, **Paul Temme**, graduated from the University of Massachusetts in 1993 with a BS in Chemical Engineering and started with a small environmental consulting firm in New Hampshire working on environmental site assessments and remediation projects involving groundwater and hazardous material contamination. One site that he worked on was the Gilson Road "Tar Pits", the second listed CERCLIS site in the U.S. which was located across the street from the first listed CERCLIS site.

Having his fill tramping through the woods and fields, Paul decided in June 1995 to come to the mecca of Chemical Engineering, Houston, TX, of course. He got involved in air quality consulting with RMT/Jones and Neuse and Zephyr Environmental, providing environmental onsite support at BASF in Freeport and Huntsman in Conroe. Eventually, Paul broke the consulting shackles and moved up the food chain by getting an environmental engineering position with Valero Refining Company in Houston where he works presently.

Paul has been active in the South Texas Section since the fall of 1996. He is currently serving as Executive Position 3, the Communications position on the Executive Board. He worked with University of Houston ChE students aiding them with programming and funding support for their regional student meeting this past February. He also worked with **Bill Stadig** and **Andrew Wilson** to complete the purchase of the Publicity Display Booth. Paul will continue to work with the newsletter and website issues to ensure that the South Texas Section has the means to communicate the activities and opportunities that are provided by the local section.

JOIN AIChE
South Texas Section
Today!



James R. (Jim) Murphy (center) receives the 1999 South Texas Section Distinguished Service Award as AIChE President Bruce Finlayson (right) looks on.

JAMES R. MURPHY

1999

AMERICAN INSTITUTE OF CHEMICAL ENGINEERS SOUTH TEXAS SECTION DISTINGUISHED SERVICE AWARD

The 1999 South Texas Section Distinguished Service Award recipient, **James R. (Jim) Murphy** is a native of St. Louis, Mo. and a graduate of St. Louis University High School where he participated in Junior Achievement. Awarded the Joseph P. Kennedy, Jr. Foundation Scholarship, he attended the University of Notre Dame and worked summer jobs for Monsanto and Twentieth-Century Fox.

Upon graduation, Jim was hired by Monsanto and, after a few months, was sent down south to Chocolate Bayou near Alvin, Texas where he worked for the Inorganic Division in the Cumene Phenol plant during start-up and debottlenecking.

At the same time, Jim pursued an MBA in Marketing/Finance at the University of Houston that he had begun at Washington University in St. Louis. About 1969, Jim entered the marketing side of Monsanto and was promptly sent back to St. Louis for extensive training and then transferred to New York. But he soon found a way to return to Houston as a Senior Sales Specialist in Specialty Sales.

Jim then moved on to Church & Dwight, i.e., Arm & Hammer Baking Soda, departing after 15 years and began his involvement with the STS's C.E.O. Jim also has been employed by Naylor Industries, Baytech Engineering, Cyprus, AMAX, and 2000 United States Census.

It has been Jim's efforts while involved with C.E.O. as well as his volunteering to help others in the STS community and volunteering his time to help out with STS activities such as the Offshore Technology Conference, Process Safety Symposium, and the Spring National Meeting that resulted in his being awarded the 1999 South Texas Section Distinguished Service Award. Jim also has a family and has been active in community organizations, including finding time to serve as a Scoutmaster.

MAY 1999 AWARDS MEETING





Chen-Hwa Chiu *for* **AIChE Director**

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Professional Experience

- Technology Advisor of LNG & Gas Processing at Texaco
- Director of Process Engineering at Fluor Daniel
- Chief Process Engineer at Bechtel
- Engineering and R&D at Kellogg, Exxon, Air Products and Lummus
- Registered Professional Engineer in Texas and Pennsylvania
- Ph.D. and Master of Engineering, University of Oklahoma

Contact: (713) 432-6922, chiuch@texaco.com

TEXAS WANTS PROFESSIONAL ENGINEERS TO SPEND MORE \$\$\$

In 1999, the Texas Legislature passed HB 1544, which significantly changed the **Texas Engineering Practices Act**. Among the changes, it is now necessary for firms that provide engineering services to register and pay an annual fee. The new law also requires individual practitioners to register themselves as a business entity, even if operating as a sole proprietor, and to pay \$200 annually.

A group of registered professional engineers from the South Texas Section of AIChE (**Ed Ekholm, Norman Carnahan, Dennis Griffith** and others) have been in contact with various Texas state legislators (Rep. **Joe Nixon**, and Rep. **Beverly Woolley**) from the Houston area to voice our concern about the new law and its application as interpreted by the Board of Professional Engineers. We have been told that the new law was drafted and passed by the Legislature without much input from registered professional engineers. We have also been told that the law can be modified by the next Legislature, and that our local Representatives are interested in working with us to draft a new law that will better serve the needs of the parties concerned.

We have been in contact with our counterparts in local sections of other engineering professional societies (ASCE, ASME, SPE, and others). Some liaison with those groups is strongly favored, as they are affected and very concerned by the new law, also.

It will be helpful if all members of STS-AIChE to become aware of the changes in the Texas Engineering Practices Act. Thus, the Governmental Interaction Committee of STS and the Professional Development Committee are sponsoring a joint Workshop at the September 7 meeting. (*See front page for details*). We will discuss the issues crystallized by the impact of the new law. The discussion will include concept of requiring firms that provide engineering services to register with the Board of Professional Engineers and the registering of sole practitioners as firms.

In the event that the Texas Legislature insists on requiring firms to register and pay a fee, we need to discuss the issue of requiring individuals to register themselves as a firm, even if they are sole proprietors. There may be some reasons for this, but I cannot think of any valid ones.

After thorough discussion of these issues and the background of the new law, we need to formulate an ACTION PLAN to maintain contact with our state legislators and to work with their staffs to write a new law to modify or replace the one that was recently passed.

We all need to get involved in the process so that our Representatives and Senators will understand that more than a few engineers are concerned about the changes in the law.

Norman F. Carnahan, P.E.

(Edited by Larry P. Lowell, P.E. in Ohio)

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American Institute of Chemical Engineers / South Texas Section 2000 Offshore Technology Conference

In addition to staffing the OTC's Proceedings Distribution booth, the STS assisted AIChE by providing volunteers to staff the Founder Society Booth in the Astro Arena Lobby. STS Members **Ben Okoh**, **Johnnie Wagner**, and **Fred V. Wolford** aided **Scott Rothschild** (AIChE - NY) in staffing this booth for National AIChE.

The following STS members staffed the Offshore Technology Conference Proceedings Distribution Booth:

Ernie Althaus

Norman F. Carnahan

Mark Demark

Laura J. Gimpleson

Vas Kenyen

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2000 CONTINUING EDUCATION COURSE SCHEDULE

The calendar of short courses for the remainder of the 2000 year at the **Mary Kay O'Connor Process Safety Center** is given below. Detailed information for each course is available on the Center website:

<http://process-safety.tamu.edu>

Questions regarding additional information, tailored courses and registration should be address to:

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fax (979) 458-1493

October 2-3, 2000

Quantitative Risk Assessment Using Fault Tree Analysis

October 16-17, 2000

*Root Cause Incident Investigation
(Date Change)*

November 6-7, 2000

Management of Change



James T. Richardson (right) accepts the South Texas Section Best Applied Paper Award for 1999 on behalf of F. Craig Moats, Timothy E. McMinn, and himself.



Aydin Akgerman (right) accepts the South Texas Section Best Fundamental Paper Award for 1999 on behalf of Bin Lin and himself.

American Institute of Chemical Engineers / South Texas Section ANNUAL BEST PAPER AWARDS

The Annual STS Best Paper Awards were judged by the following persons: Karl Anderson, Evan Bauman, Lloyd Clomburg, Sue Degaleesen, Ray French, Nick Gonzales, Roger Jean, Andreas Matzakos and Mahendra Patel Who also served as Chairman of the Best Papers Awards Committee.

BEST APPLIED PAPER

There were five contenders in the Best Applied Paper category with the winning paper, "Radial Reactor for Trichloroethylene Steam Reforming", authored by F. Craig Moats, Timothy E. McMinn, and James T. Richardson. This paper was published in the AIChE Journal, Vol.45, No.11, Nov 1999.

BEST FUNDAMENTAL PAPER

There were also five contenders in the Best Fundamental Paper category. The winning paper was "Isoprene/methyl acrylate Diels-Alder Reaction in Supercritical Carbon Dioxide" and was authored by Bin Lin and Aydin Akgerman and published in Ind. Eng. Chem. Res., Vol.38, No. 12, 1999.



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