

AIChE® Chicago Columns

Chicago Section e-newsletter

November 2006

LOCAL SECTION GENERAL MEETING
NOVEMBER 8, 2006

"Membranes for Natural Gas Treating and Upgrading"



November 8:

Membranes for Natural Gas Treating and Upgrading

November 12-17 :

AIChE Annual Conference, San Francisco, CA

November 11-13 :

AIChE Student Conference, San Francisco, CA

December 3:

YPAB Social at BW3

"Natural gas is a complex mixture that must be treated to remove unwanted components before it can be introduced into the intrastate pipeline system for delivery. While methane is the major component, the raw gas can contain higher molecular weight hydrocarbons, inerts, such as nitrogen and carbon dioxide, toxic components, such as hydrogen sulfide, and others. Historically, gas processors used absorption, adsorption and cryogenic distillation as the major unit

operations for treating the gas. Membranes are the newest operation in the processors tool box, but not well known.

Gas Technology Institute has been involved in the testing and operation of gas separation membranes for dehydration, carbon dioxide, hydrogen sulfide, and hydrocarbon removal. Examples of gas-gas membranes that rely on pressure differential as the driving force to move the gases through the membrane with a solubility/diffusion mode and gas-liquid membranes that rely on chemical potential as the driving force to move the gases through the membrane pores will be presented.

Agenda:

Evening Session:

Dinner Registration 5:30 PM - 5:45 PM
Social 5:30 PM - 6:30 PM
Dinner 6:30 PM - 7:30 PM
Speaker 7:30 PM - 8:30 PM

Location:

Wellington of Arlington
2121 S Arlington Heights Rd.
Arlington Heights, IL 60005
(847) 439 6610

www.wellingtonbanquets.com

To register go to

<http://www.aiche-chicago.org>

PDH Credits:

One professional development hour credit for 50 minutes of instruction.

Cost:

Evening Session: \$29.00 for Members
\$35.00 for Non Members
\$15.00 for unemployed members
\$5.00 for AIChE student chapter members

For more details, click below

<http://www.aiche-chicago.org/meetings.htm>

INSIDE THIS ISSUE:

November Meeting	1
Chair's Corner	2
Energy and Refining Symposium	3
Thiele Award	3
YPAB Social	4
Call for Volunteers	5



CHAIR'S CORNER

Accidents Are No Laughing Matter

BRIAN C. GAHAN

Recently, I've been reading in the newspaper on what seems to be an inordinate number of traffic accidents and fatalities, especially with teens and young adults. It seems particularly tragic when someone so young makes a critical error behind the wheel, or hops into a friend's car to find they're in the wrong place at the wrong time. Too often these accidents are completely preventable. Accident investigations reveal the sober truth about factors contributing to their cause, and common sources are cited: alcohol, driving distractions, speed, and inexperience.

Although accidents can happen to any one of us at any time, it's important to recognize why they happen and what can be done to prevent them. I did a little research online and was amazed at the wealth of information and organizations dedicated to health and safety. Although motor vehicle accidents grab our attention in the news media, unintentional injuries of all types are leading causes of injury and death. According to the National Center for Injury Prevention and Control, unintentional falls were the leading cause of non-fatal injuries treated in emergency rooms in 2004 for all ages except 15-24. That same year, the leading cause of death from unintentional injury for ages 1 to 64 was motor vehicle accidents. When considering all causes of death in 2004, unintentional injury was ranked the highest for ages 1 to 44 years old. (Source: National Center for Injury Prevention and Control (<http://www.cdc.gov/ncipc/>)).

The National Safety Council (think Green Cross) estimates that off-the-job injuries and fatalities cost U.S. businesses almost \$200 billion annually in lost productivity. Council research shows 9 out of 10 fatalities and nearly two-thirds of disabling injuries to workers each year occur off the job. According to data from the 2005-2006 edition of the council's "Injury Facts" an estimated 62,100 fatalities occurred in the home and community in 2004 – translating to about 56 percent of all recorded injury-related deaths.

I also found at their website (<http://www.nsc.org>), the impact on deaths and injuries in U.S. homes and communities:

- About 1 out of 17 people experience an unintentional injury each year.
- About 32 percent of deaths and disabling injuries involve workers off the job.
- A fatal injury occurs in the home every 14 minutes and a disabling injury every 4 seconds.
- The five leading causes of fatal injury are falls; poisoning; choking; drowning; and fires, flames and smoke.
- Smoke inhalation accounts for a majority of deaths in home fires.
- A public fatal injury occurs every 21 minutes, and a disabling injury occurs every 4 seconds.
- The four leading fatal causes of death in public places are falls, poisoning, drowning and choking.

People 65 and older suffer more than half of the fatalities in public injuries.

Knowing common causes and locations of unintentional accidents can bring about awareness to the problem, but we should also understand how these accidents takes place. According to accident investigation theorists (Ames, Baker, Ludwig and Heinrich were major contributors to the field throughout the 20th century), accidents arise from a series of events that take place in a linear or multi-linear sequence. Any disruption or adjustment to this sequence can stave off the unintentional event. Such theories suggest that accidents don't just happen. Most are preventable if you break down the sequence of required events and make appropriate changes. This is true for all accidents, at home, at work and at play.

So if most unintentional accidents are preventable, what specific actions can we take to break the sequence of events before someone is hurt? Certainly, the responsibility is ours and the actions can be quick, easy and inexpensive. Here's a short list of some good reminders for all of us:

- **Think it through/take your time** – Perform a little cause and effect scenario in your gray matter before you jump into something. Don't be in such a rush to accomplish a task that you get sloppy or ignore dangers and



potential victims around you.

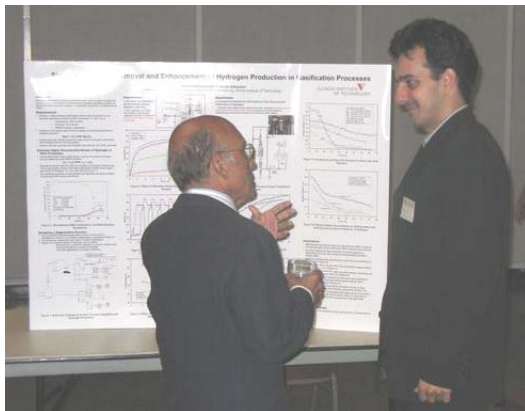
- **For every action there is a ... consequence** – Realize what may happen when you lean too far while standing on the top ladder rung (the one that says "not a step").
- **Pay attention/be alert** – If you are in a dangerous situation, be on guard.
- **Don't put off for tomorrow what you can fix now** – Wipe up that spill... NOW!
- **Be prepared** – The scouts got it right and so should you.
- **Use the right tool** – A screwdriver is not a multipurpose tool!
- **Know what to do** – Learn more about accident prevention, take a safety or first aid class, and get the right training for the job at hand.
- **Practice makes perfect** – Get some supervised experience before going solo.
- **Take a break** – Fatigue dulls the senses, so take five.
- **Count to ten** – Don't let your anger take over good judgment.
- **Slow down** – Speed kills, right? How much time are you really saving??
- **Share the wealth** – Talk with your family and coworkers about safety.

This is far from a complete list on how to prevent accidents, but merely a compilation of some simple, common sense tips drilled into most of us by parents, teachers, employers and others over the years. Take this list for what it's worth, but do take the time to be safe. Learn more about how to be safe and pass it along to others. It really is up to you.

Now, buckle up!

**AICHE—CHICAGO SYMPOSIUM 2006
REFINERY PROCESSING AND IN-PLANT
ENERGY CONSERVATION AND OPTIMIZATION**

The annual AIChE—Chicago Symposium was held on October 9-10, 2006 at Illinois Institute of Technology. The first day started with a lecture from Hamid Arastoopour, Dean of the Armour College, on energy sustainability. Subsequently presented were energy topics of interest to not only chemical engineers, but to everyone in the manufacturing and operations field. Speakers suggested solutions for reducing energy costs in lighting, compressed air, boiler and steam systems, etc. New and improved stationary power generation systems were also presented as well as the cost and practicality behind their implementation.



The second day covered trends in the refining and petrochemical industry. The day started with a lecture from Ed Arnold, Jacobs Consultancy Group Manager, on trends in the refining industry. Then, the schedule was separated into two tracks: refinery processing and maintenance and reliability. Refinery processing topics in Biorenewables and naphtha desulphurization. The second day concluded with a lecture from Michael Brodrigg, BP Amoco Senior Consultant on Process Safety, on the Texas City March 2005 Incident. Throughout the symposium, many posters were presented from pump design, coking, to

gasification.

The symposium concluded with AIChE-Chicago's monthly meeting. Dinner on Tuesday night was served at IIT with Bob Kent, CITGO Lemont Refinery Manager, addressing chemical engineers of the new and important trends in refining. The symposium encompassed engineers from various backgrounds including pharmaceuticals, energy, petroleum, and consulting.

The presentation slides and posters will be available at

<http://www.aiche-chicago.org/symposium>

This website will be active for the foreseeable future to act as not only an outline of the topics presented, but also as a technical resource for engineers.

**NOMINATIONS
REQUESTED
FOR THE ERNEST W.**

The Ernest W. Thiele award is sponsored by BP and recognizes the outstanding contributions to our profession by a Midwest region chemical engineer. This award was established by the AIChE Chicago Section and is presented annually to a Midwest region AIChE member. This internationally recognized award consists of an engraved plaque and \$1000 honorarium presented at our sectional meeting.

Nomination forms and additional information can be obtained from the Thiele Committee Chair.

One of the highest honors a distinguished chemical engineer can receive is our Chicago Section Thiele award. Please consider nominating a deserving engineer for this prestigious award.

Jim Simnick
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Naperville, IL 60566

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[More info at: http://www.aiche-chicago.org/awards.htm](http://www.aiche-chicago.org/awards.htm)



2007 National Engineers Week Future City Competition

WANTED: ENGINEER MENTORS & JUDGES

The 2007 Future City Competition™ is once again being held in over 30 cities across the country. This annual competition is held for 7th and 8th grade students to foster interest in engineering, math and science through hands on computer modeling, essay writing, oral presentation and model building of the students Cities of the Future. Schools from Chicago and the suburbs annually participate in this event.

Volunteers are needed to help plan the competition, be an engineer mentor to a school or be a judge for the competition in January. Planners are needed to work with the schools, help sign up volunteers and help with mailings and press releases. Engineer mentors will work with the students in an advisory role. They will visit their school 6-10 times throughout the competition, answer questions and guide the students. Judges are needed for two Saturdays in January to score the students work. Information sessions will be held to assist the engineer mentors and judges in their responsibilities and to answer questions.

Please call Don Wittmer at (312) 930-9119, email dwittmer@hntb.com or Aruch Poonsapaya at aruchp@sbcglobal.net to sign up or to get more information. This is a great opportunity to influence and encourage the engineers of the future.

We hope you can help!

For additional information including sponsorship opportunities go to
www.futurecitychicago.org

FALL YPAB NETWORKING SOCIAL:
12PM DECEMBER 3, 2006
BUFFALO WILD WINGS (MT PROSPECT, IL)

YOUNG PROFESSIONALS ADVISORY BOARD OF CHICAGO

Location: Buffalo Wild Wings, 301 E. Euclid, Mount Prospect IL 60056

Are you new to Chicago? Are you new to AIChE? Do you want to increase your network base? Are you interested in meeting other young engineers in the area? Are you a student who is interested in meeting young engineers? Are you an experienced engineer interested in meeting young engineers? Do you want to see the Monsters of the Midway stomp out the Minnesota Vikings?

If you answered yes to any of the above questions, then Come out and join other young professional engineers at BW3's on Sunday December 3rd. We will have complementary appetizers for the attendees. Cash Bar.

Event details may change, please refer to <http://www.aiche-chicago.org/YPAB> for current information.

RSVP: ypab@aiiche-chicago.org



NOVEMBER 2006

SUN	MON	TUE	WED	THU	FRI	SAT
			1	2	3	4
5	6	7	8 General Meeting: Membranes for Natural Gas	9	10	11 AIChE Student Conference: San Francisco
12 AIChE Student Conference: San Francisco	13 AIChE Annual Meeting: San Francisco	14 AIChE Annual Meeting: San Francisco	15 AIChE Annual Meeting: San Francisco	16 AIChE Annual Meeting: San Francisco	17 AIChE Annual Meeting: San Francisco	18
19	20	21	22	23	24	25
26	27	28	29	30		

Join Us...



**Illinois Institute of Technology and
Fouad Teymour, Chairman of the
IIT Chemical and Environmental Engineering Department,
invite you to an alumni reception
in conjunction with the **AIChE Annual Meeting****

Tuesday, November 14, 2006

from **7:00–9:00 PM**

Appetizers and Cash Bar

**San Francisco Hilton, Yosemite Meeting Room B
333 O'Farrell Street, San Francisco, CA**

**Reply to Marian Quirk at 800.448.2586
or email alumni@iit.edu by
Wednesday, November 8, 2006.**

www.chee.iit.edu

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SUBMITTING ARTICLES TO AICHE COLUMNS

We are now initiating a regular Newsletter and are welcoming people to e-mail any material they would like to appear on the newsletter. These can be job postings, advertisements for upcoming committee meetings, articles, general advertisements or anything else you may want to submit. To submit material e-mail your material to aichechicom@aiche-chicago.org with "newsletter article request" as a subject heading.



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