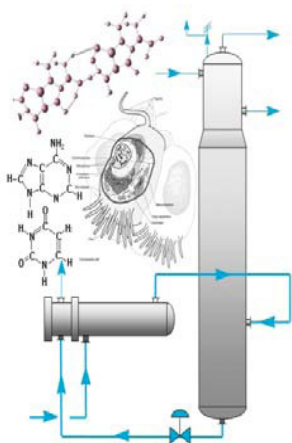


# December Newsletter

Chicago Section

[www.aiche-chicago.org](http://www.aiche-chicago.org)

December 2009



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AIChE Chicago

DECEMBER 2009

HAPPY  
HOLIDAYS  
&  
HAPPY  
NEW YEAR



## Chair's Corner

I want to start this month's chair's corner by saying **HAPPY HOLIDAYS** to all of you who receive this newsletter. I wish you all the best in the upcoming year full of healthy and happy days.

Our emails reach more than 2000 inboxes; some of them may be lost in cyberspace and some may never get opened and others may get deleted within seconds. Nevertheless we somehow got connected sometime in the past and can play a small role in each other's life. We do not know each other personally and possibly have no idea about each other's life even a tiny bit. One thing we have all in common is that we are all engineers (mostly chemical) or work as an engineer or somehow related to an engineering firm. Yet still we have many different tastes and interpretation of things. We have used this to our benefit and have managed to provide new offerings month after month to our members.

Our November meeting was very well attended and to the surprise of our speaker, there were many questions during and after his talk.

We are now in the process of planning our next year's symposium which will be held in Fall 2010. With the help of the people who were managing the symposium since its birth in 2006, a symposium booklet is being developed to help with the newcomers. Believe it or not there are many details involved in planning and executing the two day symposium and it simply cannot be handled by just a small group of people. We feel the symposium is a great service to our members and local schools and local industries. It's a great point of contact for all these three sections to meet and provide and obtain information. Many more opportunities such as a table top display for companies and universities were available which probably were not used to their full potential.

We are committed to make the next year's symposium one of the best local event and need everybody's help to make it happen. Our liaisons in industry and academia are actively seeking new people to help us spread the word.

At the end of this month's chair's corner, I would like to remind you once again to keep us informed about your thoughts and help us improve our section.

Reza Mostofi

UOP



## November Meeting





# Save the Date, January 21st 2010

## Chemists and Engineers in the Courtroom

Imagine yourself as a juror faced with the responsibility of deciding the fate of a case brought before the courts involving a product failure, a chemical explosion, an environmental contamination, or a toxic fatality. You spend days hearing from both sides, plaintiff and defense, presenting their case. When the case involves science or engineering, the courts rely on *experts*, who by virtue of their education, training and technical experience in the forensic sciences and the law, can help establish the scientific facts of the case and provide the courts with opinions regarding the evidence. While the role of courtroom experts and forensic scientists has gained much attention on television shows such as Crime Scene Investigators (CSI), the real life of scientific experts in the courtroom requires a unique set of technical, legal and communication skills. Evidence and scene preservation techniques, sample collection and analysis, documentation and demonstrations are essential elements of the fact finding process. Chain of custody, spoliation of evidence and the Daubert standard are challenged throughout the process. This talk will highlight many of the approaches and techniques used in the forensic sciences and the legal obligations associated with the role of expert witness. We will conclude with a look into how technology is impacting the role of Chemist and Engineers in the Courtroom.

## Speaker's Bio

**Dr. Koehler** is the CEO of **Packer Engineering, Inc.**, a multi-disciplinary engineering consulting and technical services company, offers engineering investigation and analysis, customized and routine testing, accident investigation and reconstruction, and pretrial and courtroom testimony. Prior to coming to Packer Engineering as CEO, **Dr. Koehler** was involved in a broad range of chemical and process research projects at both Honeywell and Searle Labs including the development and toxicological evaluation of fluorocarbon refrigerants, blowing agents and solvents; polymers and composites; aerospace environmental control systems, air quality technology, aerospace life support systems; advanced coatings; advanced aviation fuels; catalysts; separation membranes; fuel cell technologies, chemical demilitarization, chem./bio protection, as well as environment and sustainability programs.



**Dr. Koehler** has published extensively on subject areas which include drug design techniques, chemical structure-property relationships, polymer theories, indoor air quality, chemical simulations, fuels properties, and coatings.

**Dr. Koehler** received his BS in Chemistry, Mathematics and Computer Sciences from Loyola University in 1982 and his Ph.D. from the University of Illinois in 1986.

## Continuing Education Course for Practicing Chemical Engineers

The UIC Department of Chemical Engineering is offering a course which provides engineers with an opportunity to get in-depth knowledge and first-hand experience on Aspen Plus.

### **ChE 494: Selected Topics in Chemical Engineering** *Process Simulation with Aspen Plus*

**DATES:** January 11, 2010 – May 5, 2010

**CLASS TIMES:** Mondays and Wednesdays, 3 - 4:15 pm

**CREDITS:** 4 graduate credit hours

**TUITION & FEES:** Extramural tuition for this course is \$456 per credit hour, plus a \$15 per credit hour non-refundable administrative fee.

**LOCATION:** Chemical Engineering Building, Room 218, 810 South Clinton St.

**PROFESSOR:** Ludwig C. Nitsche, PhD

ChE 494 will introduce and cover:

- ✓ Building and running process simulation models.
- ✓ Using a variety of physical property methods for analysis.
- ✓ Supplementing the Aspen Plus property database with independent data.
- ✓ Carrying out parametric sensitivity analyses and process optimization.
- ✓ Meeting design specifications.
- ✓ Creating process flow diagrams.
- ✓ Modeling processes involving solids and electrolytes.
- ✓ Using equation-oriented modeling for heat integration and recycle.
- ✓ Generating and using Aspen Plus Fortran models.
- ✓ Creating custom GUI forms to handle input and results for custom models.
- ✓ Practice with case studies.

If you have any questions, contact the Office of Continuing Education  
by phone at (312) 996-8025 or by email at [oce@uic.edu](mailto:oce@uic.edu).

# Job Opportunity at Abbott



## Career Opportunities at Abbott

### To Apply:

Visit [www.abbott.com/careers](http://www.abbott.com/careers) to submit your resume to the Requisition using 69031BR in the Keyword section.

Include phone numbers for contact during business and evening hours. No exploratory applications please.

Follow your aspirations to Abbott for diverse opportunities, competitive salaries, great benefits, 401(k) retirement savings plan, company paid pension plan and profit sharing; all with a company providing the growth and strength to build your future.

Abbott welcomes and encourages diversity in our workforce. EOE/DFW

We are a global, broad-based health care company devoted to discovering new medicines, new technologies and new ways to manage health. Our products span the continuum of care, from nutritional products and laboratory diagnostics through medical devices and pharmaceutical therapies. Our comprehensive line of products encircles life itself – addressing important health needs from infancy to the golden years.

### Senior Environmental Health and Safety Specialist (69031BR)

#### Job Responsibilities:

The Senior Environmental Health and Safety Specialist's objective is to Support the Environmental, Health and Safety program for Global Pharmaceutical Research and Development Lake County Operations Process R&D and Chemical Pilot Plant organization. Focus on Process Safety program for area of responsibility, as well as utilize this expertise to assist other GPRD EHS Staff members with process safety evaluations for other business areas as needed. Assure that EHS policies and procedures needed for compliance with applicable regulations and corporate policies are developed and effectively implemented.

#### Primary Function:

This position will report to the EHS Supervisor for the Process R&D organization. Support the Environmental, Health and Safety programs for assigned business areas. Support implementation of programs that establish and maintain a culture that fosters compliance with EHS requirements. Develop and implement programs to identify and control EHS hazards within areas of responsibility. Lead efforts to ensure that strategic objectives/initiatives of Process Safety in the area of responsibility are identified and successfully executed. Establish policies and procedures to assure compliance with corporate and regulatory requirements. This position must work with business area management to assure that EHS programs are accepted by and implemented by management. Identify ways to integrate EHS into the business systems.

#### Desired Background:

Bachelor of Science Degree (Degree required in applicable fields of environmental, health and safety. Would also consider degrees in following areas: Physical or Chemical Sciences, Chemistry, Biochemistry, Environmental/Chemical Engineering)

#### Desired Skills:

BS + minimum 3 years experience  
MS + minimum 2 years experience  
PhD + minimum 2 years experience



## YPAB Activity

### CyberSport

**Date:** Tuesday, January 26th, 2009

**Time:** 6:00-8:00pm

**Location:** CyberSport, 2381 W. Army Trail Rd., Addison, IL 60101

**CyberSport** offers food, arcade games, pool, Chicago Indoor Racing, and CyberSport (aka whirlyball).

RSVP to [jessicaswary@msn.com](mailto:jessicaswary@msn.com) by January 15th and state whether you would be interested in playing CyberSport. A minimum of 10 players is required to open a court.

Gaming prices vary. For more information, visit the website <http://www.chicagoindoorracing.com/HoursAndPricing.aspx>.

Food and drinks will be individually billed.

***To stay up-to-date on all YPAB events, visit the website at [www.aiche-chicago.org/ypab](http://www.aiche-chicago.org/ypab).***

### January House Party – 10XE Challenge

**Date & Time:** TBD

**Location:** Jessica Swary's House

The “**House Party**”, sponsored by AIChE National, is an opportunity for Young Professional to collaborate on topics affecting society and the world. January's House Party topic will be the **10XE Challenge**.

The purpose of the challenge is to capture the methodology behind radically efficient designs of processes, devices, and materials in order to highlight the results of these innovations. This is a joint competition sponsored by AIChE and the Rocky Mountain Institute (RMI). RMI is an independent, entrepreneurial, nonprofit think-and-do tank. RMI strives for the efficient and restorative use of resources to make the world secure, just, prosperous and life sustaining.

Ideas can be submitted as individuals or groups. Submission resulting from the House Party will be granted a deadline extension. Incentives include recognition in CEP and at the Spring Meeting in Salt Lake City AIChE, PDH credits, and a cash prize amongst others. Visit the competition website for more information,

<http://www.aiche.org/Energy/GetInvolved/10xEChallenge.aspx>

# Illinois Society of Professional Engineers

Title: **Blending Diesel Fuel with Gasoline to Improve Diesel Fuel Efficiency.**

Location: [Giuseppe's La Cantina, 1062 Lee St, Des Plaines, IL](#)

(Triangular building at intersection of Lee and Graceland)

A dual-fuel concept is proposed to realize highly-efficient, premixed-charge compression ignition (PCCI) combustion with near zero levels of NO<sub>x</sub> and soot. In-cylinder fuel blending, with port fuel injection of gasoline and optimized direct injections of diesel fuel, is used to control combustion phasing and duration. After Computational Fluid Dynamic modelling was performed, engine experiments were conducted using a heavy-duty Caterpillar research diesel engine, confirming net indicated thermal efficiency of 53% and with NO<sub>x</sub> and soot levels significantly below the US EPA 2010 emission limits (without after-treatment). The impact of this work, once applied to diesel engine design, could be a net reduction of the use of diesel and gasoline for transportation of 30%.

The presenter, [Sage L. Kokjohn](#), is a PhD student in Mechanical Engineering at the University of Wisconsin - Madison, where he received his MSME. He has a BSME from Iowa State University. His research focuses on the development and application of advanced simulation tools used to improve the understanding of the processes occurring during the spray and combustion events of internal combustion engines.

[Dr. Reitz](#), Mr. Kokjohn's advisor, is a Distinguished Professor of Mechanical Engineering at the University of Wisconsin-Madison. He is former director of the Engine Research Center and current director of the ERC's Diesel Emission Reduction Consortium. His research includes the development and experimental validation of modelling methodologies for internal combustion engines, and his models are used internationally by major automotive and engine companies.

[1 PDH will be awarded to each attendee.](#)

More information will be posted on the website as it becomes available [www.ilspe.com](http://www.ilspe.com)



## Upcoming Meetings and Events

<b><i>January 21, 2010</i></b>	<b>Packer Engineering</b> <b>(Joint meeting with ACS)</b>
<b><i>February 9, 2010</i></b>	<b>Nanoclusters for H2 and CO2 Storage</b>
<b><i>March 10, 2010</i></b>	<b>EPA lab tour</b> <b>Chicago, IL</b>
<b><i>April 14, 2010</i></b>	<b>Student Night @ UIC</b>
<b><i>May 11, 2010</i></b>	<b>Project Design for risk Management</b>

## Career Resources

As a service to our members, we are posting jobs that are sent to us by recruiters or companies. You can access this list at:

[http://www.aiche-chicago.org/Job\\_Postings.html](http://www.aiche-chicago.org/Job_Postings.html)

AIChE national also has a very useful guide for career opportunities that you can access as a member.

<http://www.aiche.org/CareerResources/>

## **NOMINATIONS REQUESTED FOR THE ERNEST W. THIELE AWARD**

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. Completed nominations are due to the committee chair no later than March 1, 2010.**

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**

BP Amoco Complex, J-8  
150 W. Warrenville Road  
Naperville, IL 60566  
Ph 630-420-5936  
fax 630-420-4832  
email: james.simnick@bp.com

## **Need a Volunteer @ Registration Desk**

If you are planning to attend next monthly meeting please consider helping us at the registration desk. For more information, please send an email to

[aichechicago@gmail.com](mailto:aichechicago@gmail.com)

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**We are on the web**  
[www.aiche-chicago.org](http://www.aiche-chicago.org)

## **We want you for AIChE-Chicago!**

## **We need your help!**

How many opportunities can you find to learn project management, delegation and leadership skills for free? Becoming an officer in the Chicago Section of AIChE is such an opportunity. While you're learning new skills, your local network grows. Just about all of us are either undergoing a career change, contemplating a career change, or are wondering if our career will be changed for us. Volunteering with AIChE is a way to add skills and accomplishments to your resume.

[aichechicago@gmail.com](mailto:aichechicago@gmail.com)

[http://www.aiche-chicago.org/Section\\_Info/Volunteer.html](http://www.aiche-chicago.org/Section_Info/Volunteer.html)

## **Submitting Articles to AIChE Columns**

We welcome email submissions for our monthly newsletter. Commercial announcements are subject to the fee schedule below. News stories, editorials, technical or career related non-commercial contributions are always welcome with no charge. We consider job postings, announcements of for-fee training courses, expositions, conferences as commercial. Categorization of announcements is at the sole discretion of the Chicago AIChE Board of Directors. Chicago AIChE may publicize activities of interest to our members by cooperating professional societies and other non-profits without charge.

Please submit your material to [aichechicago@gmail.com](mailto:aichechicago@gmail.com) with "newsletter article" as a subject line.

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