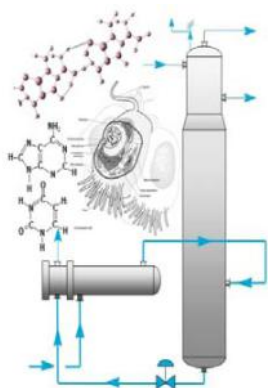


# February Newsletter

Chicago Section

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

February 2014



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## AIChE Chicago

### February 2014 Meeting & Tour of H2O+

## *The Chemist and the Cosmetic Industry*

**Perry Romanowski**  
**Vice President**  
**Brains Publishing**



### *Athena Greek Restaurant*

**Date** *Wednesday, February 19th, 2014*

**Address:** *212 S. Halsted St. #1, Chicago, IL, 60661*

*Register Here:*

<http://www.cvent.com/d/p4qp2m>

#### Agenda

5:00-6:30	Meet at Athena Greek Restaurant - cash bar
5:10—5:35	First H2O+ tour group 1
5:35—6:00	2nd H2O+ tour group 2
6:00—6:25	3rd H2O+ tour group 3
6:30 - 7:30	Dinner
7:30 - 7:45	Business meeting & Announcements
7:45 - 8:45	Technical Presentation

## Chair's Corner

Today I want to discuss something serious that applies to all of us – process safety. Keeping our processes safe involves having safe process designs, operating the processes properly, and properly maintaining the equipment. The US Chemical Safety Board (CSB) investigates accidents that have occurred in all types of chemical facilities, and after the investigations are complete the CSB distributes information about the failures so that we have an opportunity to learn from the failures of others. The CSB maintains a website at which you can review their incident reports and view training videos based upon past incident investigations. You can also sign up to receive e-mail notices from the CSB on this website: <http://www.csb.gov/>. I'll summarize three of their recent notices to give you an idea of the content in their e-mail notices. I've omitted company names in these summaries.

### **CSB e-mail dated November 14, 2013:**

**"Fatal Explosion Resulted from Crystal Maker Failing to Inspect or Test Vessels and Failed to Heed Earlier Warning about Risk to Public".** This is a failure that occurred in Illinois and the CSB report indicates that the failure occurred because the company wasn't inspecting or testing its pressure vessels. The need for inspections and testing was identified during a third party safety audit ordered by the insur-

ance company that was covering this facility, and the company had a previous vessel failure. Inspecting and testing of equipment is part of equipment maintenance, and need to include that aspect of our operations when we consider process safety.



### **CSB e-mail dated December 16<sup>th</sup> 2013:**

**"U.S. Chemical Safety Board (CSB) Proposes Recommendations for Substantial Changes to the Way Refineries Are Regulated in California".** This CSB recommendation was the result of a refinery fire that was caused by having the wrong materials in the process. It was either an example of incorrect original design or an instance of gradual process changes occurring that made the materials inappropriate. The failure resulted in a significant release and many of the people living in the area went to the hospital for treatment. Also, many filed lawsuits, and the unit was shut down for an extended period due to the failure and subsequent investigations. API had previously published information about a similar failure so this failure could have been avoided.

As a result of this failure in California almost all refineries today are reviewing their units with similar process conditions to look for conditions that could lead to similar failures in their facilities. The CSB felt strongly about this

incident and suggested that new state regulation of refineries was required. While you may not agree with that recommendation, there was an obvious benefit to the CSB investigating the failure and distributing information pertaining to this incident because it has resulted in refineries reviewing equipment to look for similar process and equipment conditions in refineries.

**CSB e-mail dated January 29, 2014:** "Fatal Explosion Resulted from "High Temperature Hydrogen Attack" Damage to Heat Exchanger; Company Failed to Apply Inherently Safer Technology". Seven refinery workers lost their lives in this accident and the cause of the failure could be attributed to either lack of knowledge of the process conditions or incorrect original design. Exchanger fouling played a role by making it difficult to determine the actual process conditions. The process had been reviewed the past, and the risk that high temperature hydrogen attack could be occur-

ring had not been identified.

As a result of this failure, refineries today are conducting reviews of equipment looking for similar situations in their equipment. Also, the Nelson curves are being revised to make this type of failure less likely in the future. The Nelson curves are used to define process limits for equipment that contain hydrogen. Once again an incident that the CSB has investigated has evolved into a new set of refinery programs to evaluate equipment and changes to improve process safety.

I encourage all of you to sign up to receive the CSB e-mail notices because I believe the information that these notices contain has the potential to significantly improve process safety in our industry.

*Jerry Wilks*  
Chair

## Future City Competition @ UIC

YPC participated in judging the Future Cities Competition that was held at UIC on January 25th. The group presented an award for the best energy design for a reliable and safe power system. Twenty-two schools participated, and YPC enjoyed joining other engineering professional societies to volunteer for this event!



## February Meeting Information

### *The Chemist and the Cosmetic Industry*

#### **Perry Romanowski**

##### **Abstract:**

The cosmetic industry is not one that most science majors even think about when they are getting their chemistry degrees. But the industry represents a great opportunity for chemists who want to use their knowledge to create products that regular people use every day. In this talk we will tour the cosmetic industry discussing the role of the chemist, the relevant science, the development of products and how they are tested. We'll also review some of the most common myths.

##### **Biography:**

Perry Romanowski has spent the past 20+ years researching and developing products to solve consumer problems in the personal care and cosmetic industry. His primary focus has been on formulating hair and hair-related products. He is currently vice president of Brains Publishing, which specializes in science education and is responsible for the consumer focused beauty website TheBeautyBrains.com and the cosmetic science website ChemistsCorner.com.

Previously, Romanowski worked for Alberto Culver, serving as a senior project leader for hair care innovation. He has been an active member of the Society of Cosmetic Chemists (SCC), and is currently the Area II National Di-

rector. In addition, he has served in various positions within the Midwest Chapter of the SCC, including chapter chair.



Romanowski received his B.S. in Chemistry from DePaul University and M.S. in Biochemistry. He has written and edited numerous articles and books. His latest book is "*It's OK to Have Lead in Lipstick*". He also teaches the SCC's Beginning Cosmetic Chemistry continuing education class. Additionally, he provides consulting services for cosmetic formulating, testing and Internet solutions; he can be reached through his [website, www.ChemistsCorner.com](http://www.ChemistsCorner.com).

To register please use this link;

<http://www.cvent.com/d/p4qp2m>

### *At H2O Plus the sea is our laboratory*

Deep within dynamic waters, we cultivate the skin-changing power of marine life. Brilliant seaweeds and algae thrive in a vigorous underwater environment where they absorb a rich concentration of minerals and antioxidants, carried by strong currents.

Through careful research and constant discovery, we isolate the most efficacious varieties, unlocking their power and distilling it into our scientifically proven formulas. From a vibrant marine ecosystem, we infuse your skin with the deepest source of life, strength and vitality.

## SAVE THE DATE

### YP SOCIAL!

Come and join your fellow YPs in celebrating a successful conference by relaxing at the YP Social. If you weren't able to make it to the conference, feel free to join us at the social!

**What:** YP Social after the 6<sup>th</sup> annual Midwest Regional Conference @UIC

**When:** Tuesday, March 11 5:30pm – 8:00pm

**Where:** TBD – look for an email with more details, coming soon!

### THANK YOU

Thank you to all the members who attended the January meeting.

The January meeting was a joint meeting with ACS and it was a success. More than 90 people from AIChE Chicago section members attended the meeting. We also raised \$120 through 50/50 raffle for the section's scholarship fund.

Thank you to the people who participated in the raffle and also the members who made their donation online. So far there is \$1000 in the scholarship program, and we are hopeful to raise the rest by May 2014 where the scholarship will be announced.

Don't forget, March 1st is the deadline to apply for scholarship.

More information on [page 10](#).





# AIChE® MIDWEST REGIONAL CONFERENCE

**March 10-11, 2014 · University of Illinois at Chicago**

**Keynote Speakers:**

Dr. Rakesh Agrawal, *Purdue University*

Dr. James Foster, *Archer Daniels Midland Company*

Dr. Hans K. Fauske, *Fauske & Associates*

**Technical Sessions including:**

- Process Safety Culture
- Renewables Research and Pilot Options
- New Problems and Opportunities Facing US Refineries
- Smart Grid Tutorial
- Advances in Reaction Engineering
- Hydraulic Fracturing—Process Overview
- Engineering for Sustainability
- Materials for Biomedical Applications
- Process Safety Qualitative Analysis Development
- Advances in Fluidization

...Plus Young Professionals workshops and social!

**• PROCESS SAFETY • REFINING • BIO-PROCESSING •  
• ENERGY • PROFESSIONAL DEVELOPMENT •**



[midwestconference.weebly.com](http://midwestconference.weebly.com)

or

[www.tinyurl.com/MRC2014](http://www.tinyurl.com/MRC2014)

## National Engineering Week

Engineers use their imagination and analytical skills to invent, design, and build things that matter. They are team players with independent minds who turn ideas into reality. Many become licensed professional engineers (P.E.s) in order to better protect the health, safety, and welfare of the public. By dreaming up creative and practical solutions, engineers are changing the world all the time.

Engineering has been called the “invisible” or “stealth” profession.

Everything around us and that we use every day has been engineered in some way, yet we may not see the engineers behind the scenes or know much about engineering. Engineering is not part of our grade school education. Many engineers whose work affects the public become licensed.

The engineering field is as varied as engineers themselves. Engineers can design and build superstructures or delicate medical instruments.

Engineers are exploring for energy and for new worlds in space. They are designing the environmental controls for an art museum or directing global sales of today's hottest cars and computers.

Who knows where the next great challenges will be?

## DuPage E-Week Outreach Volunteering

**When:** Saturday, February 22<sup>nd</sup> 2014

**Time:** 10:30 A.M – 3:30 P.M.

**Where:** IIT Wheaton 201 East Loop Drive

**Cost: Free!**

RSVP: Tiffany

[“tparrott@valdeseng.com”](mailto:tparrott@valdeseng.com) by Mon, Feb 17th

Our next event is the DuPage Engineering Week Expo (E-Week). YPC is calling for enthusiastic volunteers to participate in this event. Join us to interact with children and adults to educate about world of chemical engineering!

Please RSVP to Tiffany,

[“tparrott@valdeseng.com”](mailto:tparrott@valdeseng.com) by Mon, Feb 17th and specify whether you are interested in volunteering for a morning shift (10 AM - 1PM) or an afternoon shift (1PM - 4PM).



## ***Volunteers Needed for Midwest Regional Conference***

The Young Professionals Committee will be organizing several developmental sessions during the Midwest Regional Conference (March 10-11, 2014), and we need your help! We are looking for volunteers from the Chicago chapter to help give short mock interviews, review resumes, and to participate on panels for YP sessions. The mock interview and resume review sessions will take place immediately after lunch on both days of the conference (1:00 – 2:30 PM). The YP panel will be in the afternoon on the second day. Participants in the YP panel will discuss working with difficult people and workplace conflict resolution.

The high school outreach program is also in need of volunteers to participate in panels to discuss what it is like to work as a chemical engineer.

As an added incentive, if you volunteer to help with these developmental sessions, you will be able to register for the conference at the speaker's rate. Any member of YPC attending the conference is welcome and encouraged to help with these sessions as well. If you are interested in volunteering or have further questions, please contact Julie Gruhn ([julie.gruhn@honeywell.com](mailto:julie.gruhn@honeywell.com)) or Abigail Jack-

son ([abigail.jackson@tetrapak.com](mailto:abigail.jackson@tetrapak.com)).

For more information on the Midwest Regional Conference and conference registration, please visit:

<http://midwestconference.weebly.com/>

## ***YPC 5th Annual Whirlyball Tournament***

YPC had a record 35 players attend the 5<sup>th</sup> Annual Whirlyball Tournament and Social on January 29<sup>th</sup>, 2014. YP's socialized while enjoying pizza between games and had a blast playing and watching their friends and co-workers race around the court.

Check out more photos on the [AICHE Chicago](#)



[Google picasa web-album](#), the [AICHE Chicago facebook page](#), or the [AICHE Chicago YPC facebook group](#)!

## Congratulations AIChE Fellow

### *James W. Harris*

Jim joined UOP as an instrument engineer in 1990. He is currently in the engineering department as a process control specialist and SIS technical leader. Jim graduated from the State University of New York at Buffalo with a bachelor's degree in chemical engineering.

Early in his career Jim traveled full time for 6 years to multiple domestic and international assignments as an instrument field advisor.

AIChE activities have focused on the Fuels and Petrochemicals Division, including session chair and presenter in the refining topical sessions at AIChE spring national meetings, election to a three-year term as a Director (2007 to 2010) and chair of the 2008 student Energy Prize competition.

Jim is active in ISA and API. Within ISA he is a long term member of the S84 – SIS applications standards committee and an ISA Fellow. As part of his API work, Jim led the working group for *RP-556-Instrumentation, Control and Protective Systems for Gas Fired Heaters* - 2<sup>nd</sup> edition 2011.

Jim has been awarded 4 U.S. patents with an additional 8 patents pending for applications in refining and petrochemical process technologies.

He appreciates the endless support he receives from his wife, Jeanette and their two elementary school age boys. He also wants to thank Dennis O'Brien, Alan Zagoria and Narayanan Sankaran of the AIChE Chicago section for their support of this recognition.



## **AIChE Chicago Section Scholarship Fund**

My fellow AIChE members;

Someday we shall all want to retire and enjoy the fruits our labors. Toward that goal, we need to plan ahead and perhaps train our replacements to follow in our very large footsteps. You can do that with little effort by helping the next generation of engineers to obtain their engineering education. The AIChE Chicago Section established its affinity Scholarship, available only to immediate family of AIChE Chicago section members, for just that purpose. By making a contribution to the principal of the Scholarship Fund, which is separate from the section operating funds, you can make that happen.

Please consider a donation to the AIChE Chicago Section Scholarship Fund by:

- funding immediate need,
- contributing to the endowment of the scholarship program, or
- both of the above.

**Managers:** We need to continually fill the pipeline of engineers graduating into our profession. Small contributions now will pay big dividends later when it comes time to fill positions opening up by retiring employees of your enterprises.

**AIChE-Chicago members:** Is your son, daughter, spouse and grandchildren thinking about becoming a Chemical Engineer? If so, they could, as an entering freshman or continuing undergraduate chemical engineering student, apply for the AIChE Chicago Section Scholarship. Small contributions now yield big dividends for future engineers.

Education reduces the risk of problems associated with poverty; engineers solve problems and design the products and systems that improve the quality of life. Please invest in educating future engineers and join me in contributing to the AIChE Chicago Section Scholarship Fund. You may want to consider this as a part of your annual giving plan.

☐ \$ 25.00    ☐ \$ 100.00    ☐ \$ 1000.00    ☐ Other

☐ Immediate need                      ☐ Endowment    ☐ Both

Please make all checks payable to AIChE Chicago Section Scholarship Fund, and mail them to:

### **AIChE Chicago Section Scholarship Committee**

13964 Doral Lane  
Homer Glen, IL 60491  
[aichechicago@gmail.com](mailto:aichechicago@gmail.com)

Or:

Visit <http://www.cvent.com/d/j4q7yv/4W>

and click on the "Donate" button, and make your contribution using credit card.

When making a contribution, please provide your name and USPS and/or electronic address. The section will send a thank you letter to document your contribution to a AIChE, a non profit organization under the IRS code at section 501(c)3 (Tax Deductible).

Thank you in advance for your consideration and/or contribution.

Very truly yours,

*Azita Ahmadzadeh*

AIChE Chicago Section Scholarship Development Team

## ***Scholarship Program***

### **PURPOSE**

One of the purposes of the Chicago Section as stated in the By-Laws is to foster engineering education. The scholarship program is one way this is accomplished.

### **ELIGIBILITY**

Eligibility for a scholarship is, in accordance with the wishes of the original donor and donors since then, limited to persons who are:

1. Closely related to an AIChE Chicago Section member in good standing at the time of application. "Closely related" means: A) Children and grandchildren, whether natural, adopted, stepchild, or ward; B) Parents; or, C) Legal spouses.
2. Undergraduate or graduate student membership shall not be sufficient qualification for either the student member or a member of their family, unless they have attended at least 4 meetings in one AIChE-Chicago programming year (Sept-May).
3. Beginning or currently engaged in a course of study leading to a first degree in an ABET (or equivalent) accredited engineering program; and,
4. The recipient of no more than (3) AIChE Chicago Section scholarship awards prior to this year's application.

### **THE AWARD**

1. Each award shall be in an amount of \$1,000 if they are in engineering or \$2000 for those who are in Chemical Engineering program for each academic year in which an award is made.
2. The maximum number of awards to be made in any AIChE Fiscal Year (FY) shall be set by the Board Of Director (BOD) not later than March 31 of each FY.
3. The Selection Committee shall advise the BOD of their recommendations and the BOD shall have the authority to approve all

or reduce the number of awards.

### **APPLICATION**

1. Application for the scholarship must be made using the application form and in the manner prescribed by the Selection Committee.
2. Each application packet is required to include a personal statement requesting the scholarship award as well as academic and personal references.
3. Applications must be received by the AIChE Chicago Section not later than March 1st.

### **SELECTION**

1. The AIChE Chicago Section Scholarship award is intended to be competitive.
2. Evaluation of applicants will be based on the information provided in and/or developed through the application materials.
3. Applicants will, following evaluation by the selection committee, be ranked according to committee preference for making any award(s).

### **NOTIFICATION**

Notice of any award, or decline to award, will be sent by USPS first class mail and electronic mail to all applicants not later than May 1.

### **ADMINISTRATION**

1. There shall be a Selection Committee of five members established and maintained for the purpose of evaluating applicants and determining awards to be made.
  - The AIChE Chicago Section Chair shall be a member, and shall appoint the Selection Committee, and preside over the Selection Committee meeting.
  - The Immediate Past-chair shall be a member, and serve as the Secretary of the Selection Committee.
  - The AIChE Chicago Section Board Of Director (CSBOD) shall annually select,

by majority vote, one section member to replace the longest serving member of the Selection Committee.

2. No member selected by the CSBOD shall serve more than 3 consecutive years, except to serve an unexpired term.

## **RULES**

1. The AIChE Chicago Section Secretary will verify the eligibility of each applicant.
2. All scholarship awards, including renewals, will be made competitively, based on the information provided in the application.
3. In the event an award is declined, the Selection Committee may, at its option, make an award to the applicant having the next highest evaluation.
4. All AIChE Chicago Section scholarships must be used in the first academic year following the award.
5. The awards made shall be presented, on behalf of the recipient, to the ABET accredited engineering institution or, if attending an engineering school outside of the USA, an ABET-equivalent accredited institution at which the recipient is or will be matriculated.
6. If the studies or admission of the recipient of an AIChE Chicago Section Scholarship are delayed for any reason the Chair of the section must be notified within 30 days.
7. All recipients and alternates are subject to these same rules.
8. The AIChE Chicago Section Scholarship is to be independent of any and all other awards, scholarships, and/or grants-in-aid accruing to the benefit of the student.
9. If two or more candidates are found to be equally qualified for an award the final decision will be based upon financial need.
10. In making any award the committee shall not discriminate against any individual on the basis of any legally protected status un-

der the applicable laws of the United States of America.

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



*Ernest W. Thiele*

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, 2014.**

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

The  
**CHICAGO SECTION**  
of  
**AIChE**

**APPLICATION**  
for  
**SCHOLARSHIP**

This application must be completed by both new and renewal applicants. This application, and all documentation requested herein, must be received at the address shown below, and on page 4, not later than the following date.

**New applicants 1 March**  
**Renewals 15 March**

**Applicant Information**

Name: \_\_\_\_\_

Address \_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

Home Telephone: \_\_\_\_\_

Related AIChE member

Name: \_\_\_\_\_

Member No. \_\_\_\_\_

Relationship \_\_\_\_\_

Renewal? (circle one)      NO      YES

for AIChE use, only  
**FILE No.**for AIChE use, only  
**AIChE member**  
current \_\_\_\_\_  
date \_\_\_\_\_**Academic History** (use separate sheet if additional space is required)

List all high schools, vocational schools, colleges and universities attended, with years attendance, diplomas, and degrees, if any. Attach copies of transcripts from all high schools, vocational schools, and colleges or universities.

School & Location	From	To	Degree
_____	_____	_____	_____
_____	_____	_____	_____
_____	_____	_____	_____
_____	_____	_____	_____
_____	_____	_____	_____

**Extracurricular Activities** - List all extracurricular activities in which you were involved during your academic years. Identify the associated institution(s), if any. Provide names and contact information of advisors, sponsors, coaches, etc., wherever possible. Use a separate sheet if additional space is required.

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

## AIChE Chicago Section Scholarship Application

Qualifying Examinations - Mark all exams taken and request copies of test results be sent to the address below.

☐ ACT      ☐ SAT      ☐ GRE      ☐ LSAT      ☐ MCAT

Employment History - List all employment, beginning with the most recent. If you have been a student or otherwise employed less than full time during the past five years, include all part-time employment.

Employer/Location	Dates		Supervisor
	From	To	

Civic Activities - Identify all civic activities in which you have been involved during the past five years.

Civic Activity/Location	Dates		Organization
	From	To	

Section's Activities - Identify all section's activities in which you have been involved and/or attended during the last year.

## AIChE Chicago Section Scholarship Application

References - Provide the names, addresses, and other contact information for three persons, none of whom is related to you, who may be contacted regarding your character. Include at least one teacher or professor. Ask one other individual to submit, directly to the address below, letters of recommendation on your behalf.

	Reference	How Known
1.	<hr/> <hr/> <hr/> <hr/> <hr/>	<hr/> <hr/>
2.	<hr/> <hr/> <hr/> <hr/>	<hr/> <hr/>
3.	<hr/> <hr/> <hr/> <hr/>	<hr/> <hr/>

Personal Statements - Prepare and submit two personal statements (essays) of not less than 250 and not more than 500 words each. One of these essays is to discuss the relationships among your personal activities, interests, and goals. The other is to present an advocate position for your receipt of the AIChE Chicago Section Scholarship.

Submissions - Submit this form, when completed, to:

**AIChE Chicago Section Scholarship Committee**

Chicago Section  
13964 Doral Lane  
Homer Glen, IL 60491  
[aichechicago@gmail.com](mailto:aichechicago@gmail.com)



## **PROCESS ENGINEERS**

URS Corporation is a fully integrated engineering, construction, environmental, and technical services organization with the capabilities to support the full project life cycle – from inception through start-up and operation to decommissioning and closure. We are a publicly-traded company with more than 56,000 employees in 50 countries. Currently we are looking to fill the following requirements in our Chicago Process Engineering group:

### **Job Description**

- Provide detailed design of processes for refineries and chemical plants
- Use simulators to develop heat and mass balances
- Develop Piping & Instrumentation Diagrams and Process Flow Diagrams
- Perform hydraulic network calculations for line sizing starting with Process Flow Diagrams
- Perform relief valve calculations
- Interact with other disciplines, including equipment specialists and instrument engineers

### **Minimum Position Requirements**

- Bachelor's degree in Chemical Engineering
- Experience in the design of facilities for refineries and chemical plants
- Knowledge of major processing equipment, including fired heaters, vessels, heat exchangers, pumps, and compressors
- Technical aptitude and ability to grasp a general knowledge of multiple disciplines and technologies
- All experience levels are desired; new and recent grads are also encouraged to apply
- US citizenship or permanent residency

To apply, please send resume and cover letter to:

Doug Chidley

Business Leader

URS Chicago Process Engineering

[douglas.chidley@urs.com](mailto:douglas.chidley@urs.com)

All applicants must also register on [www.bestworkofyourlife.com](http://www.bestworkofyourlife.com)

# Knowledge is power.

At URS, we believe that the more involved you are with a process from beginning to end, the better equipped you are to provide solutions. Today, through our proven experience, we are helping clients across the Midwest meet the increasing demand for energy and chemicals. From feasibility studies, process and detailed design through construction for oil, gas, and chemical facilities, we help our customers succeed. Which is why more people are turning to us to get it done. We are URS.



MIDWEST PROCESS ENGINEERING Chicago, IL 60606 1.312.577.7437  
Douglas.chidley@urs.com

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## Historical Engineering Events in February

**February 2, 1897** – Ice cream scoop patented by Alfred L. Cralle, the first African-American in Pittsburgh to receive a patent. His patent became the model for ice cream scoops in households soon after and the basis for many scoops today.

**February 3, 1958** - Rachael Carson publishes the *Silent Spring*. Rachel Carson, a writer, scientist and ecologist, worked seventeen years for the US Fish and Wildlife Service, where she learned about the problems of pesticides on the environment.

**February 6, 1959** - Kilby patents the integrated circuit. Jack Kilby at Texas Instruments and Robert Noyce at the small Fairchild Semiconductor start-up company were both working on the concept of an integrated circuit in 1958.

**February 7, 1984** – The first untethered spacewalks were made by Space Shuttle Challenger astronauts Bruce McCandless II and Robert L. Stewart. Each used a manned maneuvering unit (MMU) in an orbit 150 nautical miles above the Earth. McCandless was the first to leave the cargo bay untethered in space

**February 10, 1874** – Water-closed railway cars patented by Lewis Latimer, U.S. patent (No. 147,363). Latimer is better known for his patents for improvement in incandescent electric lamps while working for Edison.

**February 11, 1939** – a “one page note” appeared in the magazine *Nature* by [Lise Meitner](#) and her nephew Otto Robert Frisch, entitled “[Disintegration of Uranium by Neutrons: A New Type of Nuclear Reaction.](#)” where for the first time a theoretical explanation for the splitting of uranium atoms was published and the term “fission” was coined for that process using the analogy of cell division in biology.

**February 13, 1959** – the first Barbie doll goes on sale. Barbie’s inventor, Ruth Handler, was inspired by seeing that her daughter, Barbie,

and her girl friends enjoyed playing with adult female dolls, but most dolls at the time were baby dolls.

**February 14, 1990** - First photo of the solar system is taken and dubbed the “family portrait” of our solar system as seen from outside. Voyager 1 was launched on September 5, 1977 and it passed Saturn in November 1980.

**February 14, 1946** – ENIAC, the world’s first digital electronic computer, is unveiled. ENIAC – Electronic Numerical Integrator and Computer – the world’s first operational, general purpose, electronic digital computer, developed at the Moore School of Electrical Engineering, University of Pennsylvania.

**February 16, 2005** – the Kyoto Protocol of the United Nations Framework on Climate Change goes into effect. In 1992 the Framework Convention on Climate Change (UNFCCC) was adopted in order to meet the looming concerns of global warming.

**February 17, 1998** – “Voyager 1 becomes the most distant human-made object from the Sun. Voyager 1 was launched on September 5, 1977 and it passed Saturn in November 1980.

**February 17, 2009** – Television originally scheduled to go digital in the U.S. Congress mandated this as the date when all full-power TV stations would cease to broadcast analog programming.

**February 18, 1901** – First vacuum cleaner patented by Hubert Cecil Booth, an English structural engineer. This design had the disadvantage that it had no way to collect the dust and never became a commercial success.

**February 21, 1994** - Whirlpool begins production of refrigerators without freon. In the 1930s, refrigerators began to use freon as a refrigerant. However, the use of freon became an environmental concern once it was identified as a ozone-depleting chemical.

**February 22, 1876** – Johns Hopkins opens as first research university in America. At his inauguration, Johns Hopkins first president, Daniel Coit Gilman asked: *What are we aiming at? The encouragement of research ... and the advancement of individual scholars, who by their excellence will advance the sciences they pursue, and the society where they dwell.*

**February 23, 1893** – Rudolf Diesel patents the diesel engine in Germany. Rudolf Diesel's goal was to improve on the efficiency of the gasoline-engine that used the Otto cycle. His new concept for the engine was to compress the air in the cylinder adiabatically

**February 25, 1837** – Thomas Davenport patents the electric motor and electric railway.

Thomas Davenport, an American blacksmith, first invented the DC electrical motor in 1834 and used it to make a small model of electrical railway in 1835.

**February 27, 1932** – Chadwick publishes his discovery of the neutron. Until 1932, the atom was known to consist of a positively charged nucleus surrounded by enough negatively charged electrons to make the atom electrically neutral

**February 29, 1940** – The Nobel Prize in Physics was presented to Ernest Lawrence "for the invention and development of the cyclotron and for results obtained with it, especially with regard to artificial radioactive elements".

## Upcoming AIChE Conferences and Webinars

<b>February 12, 2014</b>	<a href="#">Biomaterials and Biotechnology Webinar</a> 2:00-3:00 EST
<b>March 10-11, 2014</b>	<a href="#">6th Annual Midwest Regional Conference</a> University of Illinois at Chicago
<b>March 16-19, 2014</b>	<a href="#">4th International Conference on Stem Cell Engineering</a> Coronado, CA
<b>March 30-April 3, 2014</b>	<a href="#">2014 Spring Meeting and 10th Global Congress on Process Safety</a> New Orleans, LA

## Upcoming Chicago Local Section Meetings

<b>February 19, 2014</b>	Athena Restaurant, Greek Town, Chicago, IL <b>H2O Cosmetic Plant Tour</b>
<b>March 10-11, 2014</b>	<a href="#">AIChE Midwest Regional Conference</a> , UIC—Chicago, IL
<b>April 9, 2014</b>	Student Poster session, IIT,
<b>May 14, 2014</b>	<b>MWRD Stickney waste water treatment plant Tour</b>

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