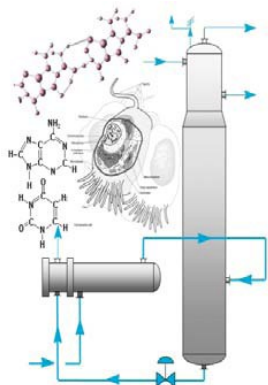


# October Newsletter

Chicago Section

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

October 2013



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## AIChE Chicago October 2013 Meeting

### *The Next Generation Lithium Ion Chemistries*

**Anthony Burrell**

### Argonne National Laboratory Tour

**Date:** *Wednesday, October 16th, 2013*

**Cost:** **Members: \$35**    **Non-Members: \$40**  
**Students: \$5**    **Unemployed Members: \$20**

*To Register:* <http://www.cvent.com/d/44q7lz>

*Non-US Citizens attending this meeting must submit an on-line form to Argonne National Laboratories prior to October 4th, or they will not be able to enter the Argonne laboratories. Link to form: [Argonne Form](#)*

**Everyone must register before October 4th!**

**Agenda**

4:30-5:00 PM	Arrive at the Gate House and pick up your badge. Then drive to the Guest House .
5:00 PM	Tour A begins on Bus 1 at the Guest House
5:05 PM	Tour B begins on Bus 2 at the Guest House
5:15 PM	Tour C begins if necessary
5:30 PM	Tours A and B switch locations
6:00 PM	All tours end and buses return to Guest House
6:00 - 6:30	Networking at Guest House – Cash Bar
6:30 - 7:30	Dinner
7:30 - 8:45	Technical presentation by Anthony Burrell

## Chair's Corner

In September we toured the CITGO refinery in Lemont, IL and then had dinner at a historic restaurant named Public Landing in Lockport. Part of that restaurant is a museum dedicated to the history of the Illinois and Michigan (I&M) canal system, and that canal runs by the restaurant. Abraham Lincoln was an advocate of building canals before the railroads were developed making most canals obsolete, and the park next to the restaurant is dedicated to Lincoln. The development of a network of canals to promote the movement of goods and stimulate business is an example of how technology changes and what was once considered advanced technology, can soon become obsolete. Sure canals are still used today, but canal use has declined, and today goods are transported much more by train and truck than by canal. Also, when the I&M canal was built, it was intended to be used to transport people as well as goods, and today canals aren't used much at all to transport people. Times change!

We in chemical engineering work in a "high tech" industry. The processes we develop can be the most advanced in industry, but like the canals new technology can come along and replace what we've developed. That's one of the reasons we need to strive to keep ourselves up-to-date on the newest processes, latest simulations, most advanced instrumentation, and other new technology in our industry. Basically, we need to keep ourselves up to date to avoid becoming old technology ourselves. AIChE provides ways for us to keep up. For example, almost all of us are currently receiving the AIChE SmartBrief, and that e

-mail publication is an example of AIChE efforts to keep us up to date. It probably is one of the first publications that told us about fracking technology and how it will impact our industry. Now we talk about fracking leading us to a "golden age of chemical engineering".



Also helping us keep up-to-date are AIChE programs like "e-learning". We can sit at our computers and learn about new approaches and new technology with just a few mouse clicks. Go to <http://www.iche.org/resources/education/elearning> to check out e-learning courses. Several examples are provided right on this webpage and you can search to find numerous other courses that might interest you. AIChE Chicago also helps keep us up to date with the tours and lectures provided during our monthly meetings. These meetings also enable us to interact with people from different companies and with people from universities. Sometimes during over the dinner table discussions at an AIChE meeting we learn about some new technology that we have never heard of before that is valuable to the projects on which we are working. We don't always realize that we have these kinds of benefits of our membership in AIChE. AIChE helps keep us up to date! It helps get us into the "golden age of chemical engineering".

*Jerry Wilks*  
Chair

## *October Meeting Information*

**Anthony Burrell**  
Head of Department  
CSE Electrochemical Energy Storage Department  
Argonne National Laboratory



### **The Next Generation Lithium Ion Chemistries**

The current need for increased storage capacity, power and cost reduction in lithium ion technologies is driving developments in all aspects of the lithium ion cell. In this talk I will discuss some of the research underway at Argonne National Laboratory that is designed to significantly improve the next generation of lithium ion cells. From cathode materials such as the lithium manganese rich materials which show capacities approaching 300 mAh/g to silicon anodes that are required to improve energy density with high capacity cathodes and electrolytes that support high voltage cells all are materials chemistry issues that we are working on to enable the next generation of lithium ion batteries.

### **October Meeting Location:**

Argonne Guest House  
Argonne National Laboratories  
9700 S. Cass Avenue - Building 460  
Argonne, Illinois 60439

### **AIChE Chicago is now on Facebook and LinkedIn!**



Like us on Facebook  
[www.facebook.com/AIChEChicagoSection](http://www.facebook.com/AIChEChicagoSection)



[Join our group on LinkedIn!](#)

## September Meeting Summary

The September meeting was a success with around 100 people in attendance. Many of the attendees took advantage of the opportunity to tour the Citgo Lemont refinery. Buses were packed for both tours, which drove around the refinery to give attendees the opportunity to see different units in the refinery. For several students, this was their first chance to participate in a plant tour.

After the tours, attendees gathered for appetizers and drinks at the Public Landing in Lockport. Unfortunately, Richard Rossi was unable to attend the event, but we were fortunate to have Daniel Sioui step in as a speaker. Mr. Sioui spoke on global trends of crude usage and gasoline and diesel specifications.

Thank you to Citgo for hosting a wonderful tour!

Thank you to URS for sponsoring the meeting and supporting student involvement in the AIChE Chicago Section!





## *Young Professionals News*

### **Chemistry Day**

**Loyola University Chicago, Lake Shore Campus**

**Saturday, October 26th**

YP is teaming up with the Chicago Section of the American Chemical Society (ACS) to help celebrate chemistry and the environment! During National Chemistry Week, ACS will be hosting a free event for all ages with experiments, demonstrations, and exhibits all focused on this year's theme: **Energy--Now and Forever**. The YP Programming committee will be asking for a few volunteers in the coming weeks--so keep the date in mind if you would like to help!

For more information on ACS Chicago's Chemistry Day visit: <http://chicagoacs.net/chemistryday.php>

### **Wine Tasting**

#### **Wheaton**

The Young Professionals Committee (YPC) is working on setting up a wine tasting in Wheaton for October. More details to come soon — watch out for an email on the YPC mailing list!

### **YP Happy Hour at Park Tavern in Rosemont**

Chicago YPs met up after work on September 18th for a night of craft beers and yummy appetizers! Our first event of the year was relaxing and gave everyone a chance to catch up after the summer break. We also got to see some new faces and hope to see more as the year goes on!



## **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.

1. 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 under the applicable laws of the United States of America.

## **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, 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

Ph 630-420-5936, fax 630-420-4832

email: james.simnick@bp.com



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)



## **Upcoming AIChE Conferences and Webinars**

<b>October 3-4, 2013</b>	<a href="#">5th AIChE Southwest Process Technology Conference</a> Galveston, TX
<b>October 8, 2013</b>	<a href="#">Advancing Water Treatment Technologies to Impact the Water-Energy Nexus</a> 2:00-3:00pm EDT
<b>October 16, 2013</b>	<a href="#">Mid-Scale LNG Processes</a> 2:00-3:00pm EDT
<b>October 21-23, 2013</b>	<a href="#">Carbon Management Technology Conference</a> Alexandria, VA
<b>October 23, 2013</b>	<a href="#">Model-Based Design &amp; Operational Optimization of Distillation Systems</a> 2:00-3:00pm EDT
<b>October 30, 2013</b>	<a href="#">Mixing and Blending of Solids</a> 2:00-3:00pm EDT
<b>November 3-8, 2013</b>	<a href="#">2013 AIChE Annual Meeting</a> San Francisco, CA
<b>November 6, 2013</b>	<a href="#">The Chemistry of Chocolate</a> 2:00-3:00 EST

## **Upcoming Chicago Local Section Meetings**

<b>October 16, 2013</b>	Argonne Guest House <b>Argonne Lab Tour</b>
<b>November 13, 2013</b>	Costas, Oakbrook, IL
<b>January 15,, 2014</b>	Joint meeting with American Chemistry Society
<b>February 19, 2014</b>	Hay Market, Chicago, IL <b>H2O Cosmetic Plant Tour</b>
<b>March 10-11, 2014</b>	<a href="#">AIChE Midwest Regional Conference, UIC—Chicago, IL</a>
<b>April 9, 2014</b>	Student Poster session, IIT,
<b>May 14, 2014</b>	<b>MWRD Stickney waste water treatment plant Tour</b>



## **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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## AICHE CHICAGO SECTION

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

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

## 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.

AICHE Publicity Committee Fees	Academic (non-AICHE)		Company		Recruiters	
	Per Month	Per Year	Per Month	Per Year	Per Month	Per Year
<b>Advertisements (3X3)</b>	100	450	150	675	N/A	N/A
<b>Half-Page (~7"x 4.5")</b>	280	1260	420	1890	N/A	N/A
<b>Job Posting (Size?)</b>	50	225	100	450	250	N/A
<b>Special Sizing</b>	Contact Publicity Committee <a href="mailto:aichechicago@gmail.com">aichechicago@gmail.com</a>					

For the purchase of a year ad, customers have the option of changing ads/jobs month to month.

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