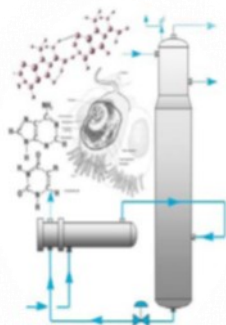


# AIChE Chicago Section November 2023 Newsletter



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## AIChE Chicago November Meeting *Atomistic modeling of battery materials*



**Dr. Hakim H. Iddir**

**Physicist**

**Chemical Sciences and Engineering Division at Argonne  
National Laboratory (ANL)**

**Date:** **Thursday, December 7, 2023**

**Location:** **Stonewood Ale House**

**Address:** **[601 Mall Dr, Schaumburg, IL 60173](http://601.Mall.Dr.Schaumburg.IL.60173)**

**<https://www.stonewoodalehouse.com/>**

**Cost:**      **\$40**    **AIChE Global and Chicago Section Member**  
                 **\$50**    **Non-Member**  
                 **\$15**    **Unemployed/Retired**  
                 **\$10**    **Student**

**Registration and Information:** **<https://cvent.me/NIRM4y>**

### **Agenda:**

#### **DATE**

5:00-6:00 PM: Networking and Social hour  
6:00-7:00 PM: Dinner  
7:00-7:15 PM: Section Announcements  
7:15-8:30 PM: Presentation and Q&A



## Chair's Corner

Hello, AIChE Chicago section and Happy Thanksgiving! I hope you all get some time to disconnect and recharge, and hopefully spend some with family and friends. I'll be putting my process control skills to the test this year as I try to smoke a turkey (we ordered brisket and pork from Smoque in case it goes badly).

Thanks to everyone who participated in hosting another successful meeting in October. This time we ended up in Palatine, another Northwest suburb. We recognize that is a long trip for many of you, and are working to host events in other parts of Chicagoland to try to spread our meetings out geographically and make them more accessible to a broader group.

Our October speaker, Gary Brierley, is a Business Development Manager at LanzaJet who spoke about some unique aspects of LanzaJet's alcohol-to-jet technology. About 3 ½ years out of a spin-off from LanzaTech, LanzaJet is in an exciting position as one of the leaders in sustainable aviation fuel (SAF) today. It was fascinating to learn about the carbon emissions of not just different SAF technologies and pathways, but also their associated feedstocks, and the implications on government incentive eligibility and value. In the future, LanzaJet could potentially use ethanol from LanzaTech to generate SAF with even lower emissions than they already do today. An added benefit is that the feedstock for LanzaTech's ethanol process, CO<sub>2</sub>, is in high supply!

For our "November" meeting (pushed back a bit this year to December 7), we are excited to hear from Dr. Hakim Iddir at Stonewood Ale House in Schaumburg. Dr. Iddir is a physicist in the Chemical Sciences and Engineering Division at Argonne National Lab (ANL). With a PhD in Physics from UIC and a Masters Degree in Chemical Engineering from IIT, Dr. Iddir has deep roots in the Chicago area. In his talk, "Atomistic Modeling of Battery Materials," he will share some of his exciting work on improving our understanding of the atomic scale structure, local environment, and processes governing these metrics in new high-energy-density cathode materials in working cells. This will be very interesting to anyone curious about Li-ion battery research. The meeting is open to the public, and PDH credits will be awarded for attendance of the technical presentation. Please plan to join the meeting as well as take this opportunity to invite your friends to give them exposure to our monthly meetings.

We officially have a date and venue for the 2024 Midwest Regional Conference: March 5-6 at Illinois Institute of Technology. A Call for Abstracts is imminent, keep an eye out for it! We are excited to provide an opportunity to share knowledge with each other and build or refresh friendships and professional networks. Belma Demirel ([belma.demirel@bp.com](mailto:belma.demirel@bp.com)) and Hadjira Iddir ([hadjira.iddir@honeywell.com](mailto:hadjira.iddir@honeywell.com)) have done an excellent job getting organized and spinning up this effort, but they are always looking for more volunteers to be involved in MRC planning and execution. Please reach out if you're able to volunteer. For more information and updates, please visit [www.aiche.org/conferences/midwest-regional-conference/2024](http://www.aiche.org/conferences/midwest-regional-conference/2024).

Once again, my mailbox is always open if there is anything that the Chicago Section can do better for you. Please don't hesitate to reach out to me at [chair@aichechicago.org](mailto:chair@aichechicago.org). I'd love to hear from you. Thank you!



**Cont. from Page 1**

## November Meeting information

**Biography:** Dr. Iddir is a Physicist in the Chemical Sciences and Engineering Division at Argonne National Laboratory (ANL).

Dr. Iddir holds a Ph.D. in Physics from the University of Illinois at Chicago, a Master of Chemical Engineering from the Illinois Institute of Technology in Chicago. Dr. Iddir joined Argonne National Laboratory in 2006.

His research interests are in the area of materials science, with a focus on developing experimental and theoretical approaches for investigating structure-property relationships at the atomic scale, defects, surfaces, interfaces in materials, chemical and physical properties of catalytic, non-catalytic and energy materials. His approach involves the use of ab-initio thermodynamics and materials modeling tools along with of electron microscopy and spectroscopy techniques.



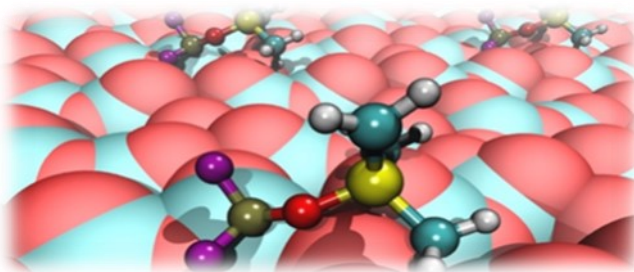
Dr. Iddir published several scientific papers and patents, and serves as a reviewer for several scientific journals, the National Science Foundation, and the Vehicle Technologies Office of the Department of Energy.

**Abstract:**

Cathode materials with improved energy densities, longer cycle-life, and improved safety characteristics are needed for portable electronic devices, smart grid systems, and transportation technologies. The highest energy-density cathode materials are based on transition metal oxides, such as layered  $\text{LiMO}_2$  ( $M = \text{Co}, \text{Ni}, \text{Mn}$ ), and lithium and manganese-rich composite layered transition metal oxide (LMR-NMC) materials. These cathode materials can address some of the challenges associated with next-generation energy storage devices. However, sufficient knowledge on the atomic scale structure, local environment, and processes governing these metrics in working cells is still lacking.

Herein, I will present few examples of current interest to the Li-ion battery research community using density functional theory to provide few insights on select structure-property relationships, such as particle morphology, elemental segregation, surface reconstruction, cathode-electrolyte interaction, bulk stability, and Li transport (anode-fast charge).

Registration: <https://cvent.me/lm0yOZ>



### **Special Notice on PDH Credits for Meeting Attendees:**

We have switched to a fully digital process for tracking attendance and distributing PDH credits. There will be a board member with a phone or tablet at each meeting recording attendance digitally, which should streamline the process. Make sure to find them and sign in at the next meeting!



## MRC-16 March 5-6, 2024

The AIChE Midwest Regional Conference (MRC) continues into its 16th year. Organized by the [Chicago Local Section](#) and hosted at [Illinois Institute of Technology \(IIT\)](#), MRC-16 provides an opportunity for engineers and scientists in the region and beyond to learn about new technologies and refresh their knowledge, as well as network with peers. Abstracts may be submitted for the following topics:

- Advances in Refining & Biorefining Technology
- Bioengineering & Nanotechnologies
- Catalysis & Reaction Engineering
- Energy Storage
- Environmental Compliance & Remediation
- Fluid Properties, Fluid Dynamics, & Transport Phenomena
- Green Engineering & Climate Solutions
- Machine Learning & Optimization
- Polymer Science
- Process Safety & Occupational Health
- Other Emerging Topics in ChE

### Submission Timeline

**Abstract Submission Deadline: Friday, January 12, 2024**

**Acceptance Status: Friday, January 19, 2024**

**Early Bird Registration Deadline: Friday, January 26, 2024**

**Poster Submission Deadline: Friday, February 16, 2024**



## AICHE MIDWEST REGIONAL CONFERENCE (MRC) VOLUNTEERS NEEDED!

AICHE CHICAGO HOSTS A MIDWEST REGIONAL CONFERENCE FEATURING TECHNICAL PRESENTATIONS FROM BOTH INDUSTRY AND ACADEMIA EACH SPRING. VOLUNTEERS ARE NEEDED TO HELP PLAN THIS EVENT.

WE NEED VOLUNTEERS TO HELP WITH  
PROGRAMMING,  
WEBSITE,  
REGISTRATION,  
ADVERTISING,  
CATERING,  
HIGH SCHOOL OUTREACH AND MORE!

IF YOU ARE INTERESTED IN HELPING OUT OR LEARNING MORE

EMAIL

[BELMA.DEMIREL@BP.COM](mailto:BELMA.DEMIREL@BP.COM)

[AZITA.AD@GMAIL.COM](mailto:AZITA.AD@GMAIL.COM)





**November is National American Indian Heritage Month** Tracing its origins to 1916 commemorating “American Indian Day” in New York State, President George H. W. Bush signed into law a joint resolution designating the month of November as the first National Native American Heritage Month in 1990. Introduced by Senator Daniel K. Inouye (Native Hawaiian) and Congressional Delegate Eni Faloemavaega (Samoan), the joint resolution commends the immense contributions of Native Americans to our Nation. [Read More »](#)

### [Mary Ross: A Hidden Figure](#)

*Originally Posted on [nasa.gov](http://nasa.gov) on Aug. 9, 2018*



Who was Mary G. Ross? She was another ‘hidden figure,’ a mathematician and engineer whose role in America’s space age is largely unknown. Her life’s work is celebrated in the August 9, 2018, Google Doodle.

Born in 1908, Ross was a Native American and member of the Cherokee Nation. After earning a master’s degree in 1938, she eventually moved to California in 1941, where landed a job as a mathematician at Lockheed, working on the P-38 Lightning fighter plane. She worked her way up the ranks at Lockheed and become the only woman among on the original team at Skunk Works.

[Read Complete Article and More at \[nasa.gov\]\(http://nasa.gov\) »](#)

## 2023 Meeting Schedule and Speakers

Month	Date	Speaker	Affiliation	Topic
<b>Dec</b>	7th	Dr. Hakim Iddir	Argonne National Laboratory (ANR)	Atomistic modeling of battery materials

## Upcoming AIChE Conferences, Meetings and Webinars

### AIChE Conferences

Nov 27-29, 2023	<a href="#">7th CCPS Global Summit on Process Safety</a> , Arcrea HIMEJI (Himeji Culture and Convention Center), Himeji City Hyogo Prefecture, Japan
Nov 27-30, 2023	<a href="#">ChemE Show</a> , Moody Gardens Hotel and Convention Center, Galveston, TX, USA
Dec 7, 2023	<a href="#">2023 AIChE Gala</a> , The Pierre Hotel, 2 E 61st St, New York City, NY, USA
Dec 8-10, 2023	<a href="#">6th International Conference on Microbiome Engineering</a> , International House at UC Berkeley, Berkeley, California, USA
Jan 8-11, 2024	<a href="#">Emerging Membrane Processes for Water Purification</a> , Tucson, AZ, USA
Feb 4-8, 2024	<a href="#">28th Annual ARC Industry Leadership Forum</a> , Orlando, FL, USA

### AIChE Webinars

Nov 30, 2023	<a href="#">Awareness is the First Step: Proposed Changes to the PSM Standard</a>
Dec 6, 2023	<a href="#">Azure Quantum Elements: Accelerating Scientific Discovery</a>

## [Connect with members & participate in discussions on Engage!](#)

Check out AIChE's member benefit, AIChE Engage. Use the robust directory search to find and connect with members. Participate in technical, career, and academic discussions about chemical engineering.

Thread Subject	Replies	Last Post
<a href="#">Improving Soft Skills Through Mentorship article- Aiche/CEP December 2020 CEP</a>	0	9 hours ago by <a href="#">Ch...</a>
<a href="#">PhD Thesis</a>		
<a href="#">Pressure setting for manway cover for tank emergency v...</a>		by <a href="#">Surbh...</a>
<a href="#">Digitalization in the process industry</a>		yesterday by <a href="#">John Braccil</a> Original post by <a href="#">Rohit Korde</a>
<a href="#">Slow Progress of New-Age Tools in Chemical Engineering</a>	6	3 days ago by <a href="#">Jacob Albrecht</a> Original post by <a href="#">Kushal Sinha</a>





# Attention Students and Parents!

If you are an undergraduate chemical engineering student or have a son or daughter that plans to study chemical engineering you may be interested in the Chicago Section's scholarship program.

Applications are due **March 15, 2024**.

Please [click here](#) to read rules and eligibility.

For a Link to the Electronic Version of the AIChE Chicago Scholarship Application Form, Click on the Link Below:

<http://form.jotform.us/form/42814483647159>



## **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 \$1,000 honorarium presented at a monthly section 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 ***April 01, 2024***.

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

To nominate, please contact: Jeffrey Zalc

bp Solutions, P&O

phone: 630.881.5478 ; email: [jeffrey.zalc@bp.com](mailto:jeffrey.zalc@bp.com)

More information about this award and the past winners:

<https://www.aiche.org/community/sites/chicago-local-section/ernest-w-thiele-award>

<https://www.aiche.org/community/sites/local-sections/chicago/thiele-award-past-winners>



## Volunteers Needed for Chicago Local Section

How many opportunities can you find to learn project management, delegation and leadership skills for free? Volunteering with the Chicago Section of AIChE is such an opportunity. While you're learning new skills, your professional 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.

Volunteers are needed to help with:

- Programming – arrange speakers for monthly meetings, and arrange catering and venues
- Logistics – arrange catering and venues
- Newsletter Editor – prepare and publish ten monthly newsletters
- Newsletter Contributions – write meeting summaries, contribute photos, and more
- Engineering Outreach – coordinate three annual K-12 outreach events with high schools and colleges
- Professional Development and Sponsorship – arrange companies to sponsor pre-meeting talks to help fund student dinners
- Awards and Scholarship Committees – Review applications for local Section award and scholarships
- Midwest Regional Conference – many opportunities including programming, logistics, website, advertising, sponsorship, high school outreach, poster session and more!
- Young Professionals – plan socials and programming for young professionals (under 35)



If you are interested in any of these positions, please contact us [aichechicago@gmail.com](mailto:aichechicago@gmail.com).

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## Young Professionals Committee (YPC) Chicago Section

AIChE's Young Professionals Committee (YPC) Chicago Section was created to start and maintain young professionals' involvement in AIChE after graduation and to ensure that students retain their membership through their transition into the work force.

We enthusiastically welcome all people with a degree in Chemical Engineering, including those currently working in industry and academia, recent graduates, and those pursuing other paths. We also welcome current students – both undergraduate and graduate – to our events.

The Chicago YPC exists as a subset of the AIChE Chicago section.

Our goal is to provide technical, career, and networking opportunities to young Chemical Engineering professional in the Chicagoland area. To accomplish this, we seek to provide a variety of technical and social activities, provide outreach and volunteering opportunities, and to create programming that will appeal to ChemE's under the age of 35.

Website: <https://www.aiche.org/community/sites/local-sections/chicago/young-professionals>

Email us: [yp.aichechicago@gmail.com](mailto:yp.aichechicago@gmail.com)

Connect with us: We have a facebook group under YPC Chicago!

Join our mailing list: We have google group under ypcchicago!

## **Why Renew Your AIChE Membership?**

**Renew your membership now to keep learning and growing.**

Renew Membership



**Stay Connected to 40,000+ international members who take advantage of:**

- Subscription to AIChE's flagship publication: CEP\*
- Education—Access to e-learning courses and instructor-led training, offering Continuing Educations Units and PDHs
- Access to CareerEngineer—a comprehensive job site tailored to chemical engineers
- Access to the AIChE eLibrary—a wealth of information from Knovel Life Sciences and the McGraw-Hill AccessEngineering Library collections

**[View COMPLETE benefits](#)**

### **AIChE Volunteer and Meeting Attendee Conduct Guidelines**

AIChE's volunteers are the core of the Institute and make all of its programs, conferences and educational efforts possible. These offerings provide excellent opportunities for AIChE members and meeting attendees to gain greater technical expertise, grow their networks, and enhance their careers. AIChE events provide engineers, scientists, and students a platform to present, discuss, publish and exhibit their discoveries and technical advances.

At all times, volunteers and meeting attendees should act in accordance with AIChE's Code of Ethics, upholding and advancing the integrity, honor and dignity of the chemical engineering profession. AIChE's Board of Directors has developed these guidelines to foster a positive environment of trust, respect, open communications, and ethical behavior. These guidelines apply to meetings, conferences, workshops, courses and other events organized by AIChE or any of its entities and also to volunteers who conduct other business and affairs on behalf of AIChE.

#### **Specifically**

1. Volunteers and meeting attendees should understand and support AIChE's Code of Ethics.
2. Volunteers and meeting attendees should contribute to a collegial, inclusive, positive and respectful environment for fellow volunteers and attendees, and other stakeholders, including AIChE staff.
3. Volunteers and meeting attendees should avoid making inappropriate statements or taking inappropriate action based on race, gender, age, religion, ethnicity, nationality, sexual orientation, gender expression, gender identity, marital status, political affiliation, presence of disabilities, or educational background. We should show consistent respect for colleagues, regardless of discipline, employment status, and organizations for which they work, whether industry, academia, or government.
4. Disruptive, harassing or other inappropriate statements or behavior toward other volunteers, members, and other stakeholders, including AIChE staff, is unacceptable.
5. Volunteers and meeting attendees should obey all applicable laws and regulations of the relevant governmental authorities while volunteering or attending meetings. Volunteers and meeting attendees taking part in any AIChE event, including the ChemECar Competition™, should also comply with all applicable safety guidelines.

Violations of this conduct policy should be reported promptly to the AIChE President or Executive Director.

**[Read AIChE's Code of Ethics](#)**

## AICHE CHICAGO SECTION

**AICHe Chicago Section**  
**2501 Chatham Rd Ste N**  
**Springfield, IL 62704**  
[aichechicago@gmail.com](mailto:aichechicago@gmail.com)

<https://www.facebook.com/AICHeChicagoSection>

<https://www.linkedin.com/groups/4538581>

<https://www.aiche.org/community/sites/local-sections/chicago>

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Online**

### Officers and Committee Members

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Chair Elect	<i>Matt Walters</i>
Past-Chair	<i>Sarika Goel</i>
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Young Professionals Committee	<i>Ruben Barajas</i>
Newsletter Editors	<i>Rosmer Chirino</i>
	<i>Alfred Sunaryo</i>
	<i>Robert Tsai</i>
	<i>Yechan Won</i>

## We want you for AICHe-Chicago!

AICHe is committed to promoting a fair, just, and equitable profession and society. AICHe believes that all who wish to be a part of the chemical engineering community should have equal opportunity to pursue and achieve success. We work toward a better future for all — through our technical expertise; through how we inspire, engage, retain, and advance future talent; and through how we treat each other within and beyond the profession.

[AICHe Equity, Diversity, and Inclusion Statement | AICHe](#)

## 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.org/community/sites/local-sections/chicago/announcements/volunteerism>



## 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.

