



# Industrial & Engineering Chemistry

*Making Chemistry Work!*

## 2021 Spring Newsletter

### I&EC Executive Board

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**SST Subdivision Chair:** Shannon Mahurin  
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**SST Vice Chair:** Neil Williams

**SST Vice Chair-Elect:** Marek Piechowicz

**SST Secretary:** Abdul Momen

### Chair's Report

As a Division, we recently marked one full year of the COVID-19 global pandemic, and the departure of life as usual. While we all experienced changes in our lives, work, and volunteering, we look forward with hopefulness to the return of normalcy, and the opportunity to once again interact with our friends and colleagues face-to-face. Although this is on the ever-nearing horizon, we embark upon a virtual Spring National Meeting, and an uncertain forum for the subsequent meeting this fall.



Carter Abney  
I&EC Chair

In spite of the challenges associated with the pandemic the business of the Division continues, as we seek to complete the tasks initiated by the Past-Chair and establish a firm foundation for the Chair-Elect's future agenda. My goal has been to encourage brilliance in the basics, returning the Division to functioning with excellence after a year disrupted by the corona virus. To those ends, we have a fully populated Executive Committee which meets virtually each month to execute the general business of the Division. Our focused committees on Programming, Public Relations, and Awards have all identified long-range projects to pursue over the course of the year. We continue to construct the Division webpage, have recently assembled a Task Force to review and correct its content, and have recruited a volunteer Webmaster / Social Media Coordinator to ensure population with relevant information. Finally, our Steering Committee is preparing for a review of our Division Strategic Plan, a re-launch of the Applied Chemical Technology Subdivision, and identifying innovative new ways we can provide value to Division members and the Society.

That said, we are missing the most important component: you, the Division members. Your ideas, opinions, and collaboration are of greatest value, and we welcome your engagement as we seek to identify how the Division can better support your needs. While you are welcome to contact me or any member of the Executive Committee, we would also welcome the

opportunity to hear from you at our Open Business Meeting on April 6. Details on how to join the meeting via Zoom are provided in this newsletter, along with the appropriate url to join the meeting.

It is an honor to serve as your Division Chair, and I look forward to the great things in store for all of us this year.

## Chair Elect Report

Greetings I&EC Members!

I was a former Associate Laboratory Director at the Savannah River National Laboratory and now work as a Senior Fellow in the College of Engineering & Computing at the University of South Carolina. While I am very new to the I&EC Division, I have spent much of my volunteer career within The American Institute of Chemical Engineering which very much has its roots within the history of I&EC. I was honored to be elected to both AIChE Board of Directors and as the 2017 AIChE President where we created a \$140 million national manufacturing institute supported by the Department of Energy, corporations, universities, and national laboratories.

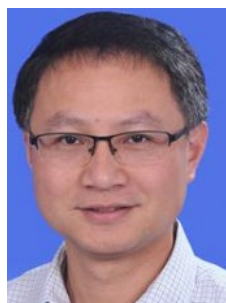


**Bond Calloway**  
Chair Elect

We have a lot to be proud of as I&EC members. From the outside looking in, I can honestly say our division is one of the strongest I have come across in my tenure as a professional society volunteer. During my tenure as Chair-Elect etc., we will be recalibrating our strategic plan that will foster our organization over the next 3-5 years. Our division is a vibrant and active community that welcomes a diverse and inclusive population of global professionals, and I will be focusing our efforts to expand this diversity and inclusion through recognition, leadership, and opportunities that I hope will benefit our division.

*Trends Over the Next Five Years* - While political administrations come and go, we can't ignore that we will see a shift in direction in US research funding. Where should we consider opportunities for new programming events? Each time the government starts a new program, these researchers need a place to discuss the new topics. Last year we saw the DOE start a major initiative in plastics upcycling. With the incoming administration, we are seeing the re-emergence of hydrogen as a truly crosscutting initiative within DOE (remember the last time?). Chemical processes that use nuclear heat to generate value added products have again gained traction. I believe our division has the resources and energy to mine these opportunities in a much bolder way and I hope our strategic plan provides a roadmap to this opportunity.

## I&EC Division Member Highlight



**Yunlong Zhang, Ph D**  
Research Associate  
ExxonMobil Research & Engineering Company

Yunlong was awarded an ExxonMobil R&D Excellence Award in 2020, for recognizing the emerging technique of non-contact atomic force microscopy could revolutionize the ability to understand the structure and chemistry of unimaginably complex petroleum samples at the single-molecule level. Early results, as published in *Energy & Fuels* (2019, 33, 4775-4780) with co-author Percy Zahl of Brookhaven National Laboratory, have changed long-held views of petroleum structure and significantly furthered petroleomics research.

## Councilor' Report

The COVID-19 pandemic in the U.S. and worldwide, has required ACS to re-evaluate how to conduct ACS meetings and conferences since 2020. The ACS transitioned from an in-person conference to a virtual event during these challenging times and continues to learn and evolve in the virtual environment. Once again, the Spring ACS meeting will be a virtual meeting with ACS monitoring the pandemic environment and working with the leadership of Atlanta, Georgia to reach a decision for the 2021 ACS Fall meeting. The health and safety of all ACS members, meeting attendees, staff, and the residents of Atlanta is the #1 concern for ACS.

The ACS holds core values surrounding Diversity, Equity, Inclusion, and Respect (DEIR) in the highest regard as does the I&EC Executive committee. To support these policies, and assist in developing a more inclusive society and scientific environment, the ACS Diversity, Equity, Inclusion, and Respect Advisory Board (DEIR AB) has a list of resources to assist and guide the division through a journey to provide a stronger inclusive environment for our members and your leadership. If you would like to get additional information, please go to ACS-Communities-Diversity & Inclusion.

### Fall 2020 Virtual Meeting Attendance

The theme of the 260<sup>th</sup> ACS National Meeting was “Moving Chemistry from Bench to Market.” registration for the Meeting, broken down by Category was:

- Member 3,494
- Student Member 1,638
- Unemployed Member 25
- Non-Member 945
- Student Non-Member 375
- Total 6,477

### Virtual Presentation Uploads:

- All Inclusive (SciMtgs) 1,735
- Virtual Platform Only 1,655
- Temporary Access Option 640
- Presentation Uploads 4,067

### Action Items for the 2021 Spring ACS Meeting:

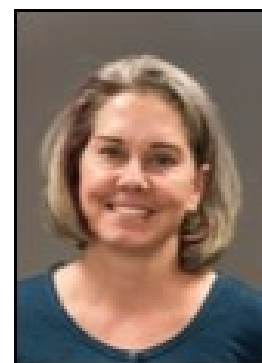
- Petition to Harmonize Committee Structures: hopes to normalize Committee structures.
- Petition to Amend the duties of LSAC (Local Section Activities Committee): assist struggling Local Sections
- Schedule of Membership: dues categories and benefits packages will be established based on the professional and personal benefits
- Approval of the distribution formula for Division Funding: For the 2022-2025 division funding allocations, transitional formula to assist in the meeting landscape changes and to quantify division activities
- Vote on Candidates for ACS President-Elect: nominees include Gerard Baillely, Anne M. Gaffney, Judith, C. Giordan, and John C. Warner



**Mary Engelman**  
I&EC Councilor



**Leigh Martin**  
I&EC Councilor



**Jaqueline Kiplinger**  
I&EC Councilor

### Future ACS Meetings and Themes:

- Fall 2021-August 22-26, Atlanta, GA, “Resilience of Chemistry”
- Spring 2022-March 20-24, San Diego, CA, “Bonding through Chemistry”
- Fall 2022-August 21-25, Chicago, IL, “Sustainability in a Changing World”
- Spring 2023-March 26-30, Indianapolis, IN, “Cross Roads of Chemistry”
- Fall 2023 August 12-17, San Francisco, CA, TBD
- Spring 2024 March 17-21, New Orleans, LA, TBD

## Programming Chair’s Report

Dear I&EC Committee, despite the on-going pandemic I am happy to communicate that we have a very engaging program planned for the Spring 2021 National Meeting! Unfortunately, it will have to happen virtually, however, we hope that you find the program interesting and relatable.

If you are attending the Spring 2021 National Meeting, come check out any or all of our Symposia! I would like to highlight that this meeting we will be hosting Symposia for I&EC Division Early Career Fellow, I&EC Division Fellow and ACS Award in Industrial Chemistry. Congratulations to all the Awardees!

Below is a s more comprehensive list of the symposia we will be hosting during the Spring 2021 National Meeting:

I&EC Division Early Career Fellow Symposium in Honor of Dr. Jason Bara  
I&EC General Papers Symposium (Co-Sponsored with CTA)  
I&EC Division Fellow Award Symposium in Honor of Dr. Wei Wang  
ACS Award in Industrial Chemistry in Honor of Dr. David Hays  
I&EC Division International Fellow Award Symposium in Honor of Azmi Mohammed Nor  
Presidential Symposium: Lessons Learned from Starting a Chemical-related Business (co-sponsored with SCC, SCHB)

We are extremely honored to have our “Lessons Learned from Starting a Chemical-related Business” Symposium be recognized in a special way as a Presidential Symposium. We would like to highlight the collaboration with SCC and SCHB to organize this Symposium and are extremely grateful for their help and support.

During the Spring Meeting we will be co-sponsoring “Presidential symposium: Chemistry and the Future of Plastics” that is organized by ComSci. I would highly encourage everyone to attend this symposium as the topics shape to be very interesting given the amount of plastics that are being used and processed in the modern world.

We are also planning interesting program for Fall 2021 including some of the symposia that have now become traditional annual Fall Symposia such as Graduate Student Award Symposium and Molten Salt Symposium. Abstracts submissions is now open until April 12th so please consider submitting an abstract!

It has not been easy to plan the Symposia in the virtual format so I would like to acknowledge John Clegg (Deputy Programming Chair) and June Kowalski (Programming Secretary) for their time and efforts!

For any questions and ideas in regards to I&EC Programming, please contact any of us on the Programming Committee! Hoping to see everyone at an in-person meeting in the near future!!



Anna C. Ivashko  
I&EC Programming  
Chair

*Anna C. Ivashko*

## Communications Chair's Report

Greetings, I&EC members! I hope this message finds you well. The Spring National Meeting is right around the corner. I hope you will attend our online programs and events. Please check out the division's programming information listed in the newsletter.

I am very pleased to announce that we have a new webmaster - James Conner Gilhula. Connor is a fifth year chemistry graduate student in the group of Prof. Alexander Radosevich at MIT. His Ph.D. work is focused on discovering new reactivity available to molecular p-block compounds in atypical oxidation states via polarity reversal and geometric constraint. Connor is broadly interested in sustainable chemistry and catalysis, and in his free time enjoys fishing, bike riding, and crystal growing. Connor helped set up the website for his research group and is experienced in website design and management.

Please visit the new I&EC website (link below) and send us your comments and feedback.

<https://acs-iec.org/>

Enjoy the spring and be safe!



**Samina Azad**  
I&EC  
Communication/PR  
Chair

## Membership

The Membership Committee is working to modernize how the Division reaches out to new members and how we try to engage our membership. We will be establishing a list of our volunteer needs and want to try and engage our members in our Division activities. If you are interested in developing or helping with a symposium, learning how programming works, have interest in social media, or want to develop novel networking and professional activities, please contact me as we can use your assistance! Please send an email with your interests to [iec.membership.committee@gmail.com](mailto:iec.membership.committee@gmail.com). Being a volunteer is a great way to network and learn how the ACS and the I&EC Division function.



**Glenn Fugate**  
Membership Committee  
Chair

## SS&T Subdivision

Greetings! I hope this message finds you well and in good spirits. It has certainly been a challenging time for everyone. Though we miss the camaraderie of in person events, the Spring Meeting is upon us and we look forward to a great time with exciting symposia, insightful presentations and opportunities to interact. Looking further to the future, we are also excited about the Fall meeting where SS&T will have programming entitled "Advanced Separation Technologies for Green Chemistry" organized by Dr. Xin Gao which will focus on novel separation technologies for sustainable and green development in the chemical industry. We encourage you to submit to this symposium and we eagerly anticipate an outstanding line up of speakers.

Given our focus on advancing science and engineering, we encourage everyone to get involved in SS&T and we are always looking for volunteers with new ideas for separations-related symposia. If you have any ideas for future programming, are interested in organizing a symposium at a future national meeting or are interested in becoming more involved in the subdivision, please reach out to me or any of the other subdivision officers



**Shannon Mahurin**  
SS&T Subdivision  
Chair

## I&EC Division Open Business Meeting

Please join us for the I&EC Division Open Business Meeting being held via Zoom.

Time: **Apr 6, 2021 06:00 PM Eastern Time (US and Canada)**

Join using the website link

<https://american-chemical-society.zoom.com/j/84808323181>

Meeting ID: **848 0832 3181**

Dial by your location

888 788 0099 US Toll-free

400 669 9381 China Toll-free

800 931 645 Hong Kong SAR Toll-free

0 800 456 1369 United Kingdom Toll-free

000 800 050 5050 India Toll-free

Meeting ID: 848 0832 3181

## Treasurer Report

2020 ended up being an unpredictable year all around, and I&EC's finances wasn't an exception. I have included a table of I&EC's 2020 budget to show where we landed financially for the year. With the 2020 Spring meeting cancelled and Fall meeting moved to a virtual format, we came heavily under budget on both income and expenses. The majority of our income came from member dues and the allotment from ACS for I&EC. Expenses were mostly from the awards for the virtually meeting that was held and setting up our new website.

Looking forward, the 2021 budget reflects a virtual Spring 2021 national meeting and a hybrid virtual/in person Fall meeting. Income wise, the budget shows a big jump in allotment due to ACS agreeing to provide additional funding to divisions this year. In terms of expenses, expenses relating to the national meetings I have set as half of the previous year's budget since the Spring meeting will be held virtually and expect that there will be an in person component to the fall meeting as well as a virtual component.

All in all, we ended with a net gain of \$30,340.90 at the end of 2020 and are still in a sound financial situation.

<b>Income</b>	<b>2020 Budget</b>	<b>2020 Actual</b>	<b>2021 Budget</b>
Grants/Awards	\$ 13,500.00	\$ -	\$ 2,500.00
Councilor Reimbursement	\$ 9,300.00	\$ -	\$ 2,500.00
Dues	\$ 21,000.00	\$ 16,686.00	\$ 17,000.00
Allotment	\$ 21,000.00	\$ 19,842.09	\$ 39,000.00
Interest	\$ 700.00	\$ -	\$ 1,000.00
Dividends	\$ -	\$ -	\$ -
Royalties	\$ 400.00	\$ -	\$ -
Misc	\$ 100.00	\$ 105.00	\$ 100.00
<b>Sub Total</b>	<b>\$ 66,000.00</b>	<b>\$ 36,633.09</b>	<b>\$ 62,100.00</b>

Expenses	2020 Budget	2020 Actual	2021 Budget
Grants/Awards	\$ 15,000.00	\$ 1,666.35	\$ 7,500.00
Speaker Fees & Expenses	\$ 1,400.00	\$ -	\$ 700.00
Registrations	\$ 2,250.00	\$ 750.00	\$ 2,000.00
Meeting Expenses	\$ 4,000.00	\$ -	\$ 2,000.00
Investment Expenses	\$ -	\$ -	
Ballots, Newsletter, Postage	\$ 4,000.00	\$ 1,627.16	\$ 4,000.00
Communications	\$ -	\$ 1,468.53	\$ 3,000.00
Conferences	\$ 2,000.00	\$ -	\$ 1,000.00
Admin	\$ 2,500.00	\$ 750.15	\$ 2,500.00
Dinner Meetings/Receptions	\$ 4,500.00	\$ -	\$ 2,000.00
Councilor Travel	\$ 11,000.00	\$ -	\$ 5,500.00
Executive Travel	\$ 19,000.00	\$ -	\$ 10,000.00
Other	\$ 350.00	\$ 30.00	\$ 100.00
<b>Sub Total</b>	<b>\$ 66,000.00</b>	<b>\$ 6,292.19</b>	<b>\$ 40,300.00</b>

Net Gain (Loss) for 2020 \$ 30,340.90

### Call for Nominations for the 2021 I&EC Elections

Annual I&EC elections are upcoming. The I&EC is seeking candidates for the positions:

- Chair-elect (3 year commitment);
- Treasurer (2 year commitment);
- Councilor (3 year commitment)

If interested in more details, please contact Sam Morton ([mortonsa@jmu.edu](mailto:mortonsa@jmu.edu)). The ballot will be locked in by 1 June for the election.

### Member Announcements

We are beginning a new section of the Newsletter "Member Announcements". Please send any news you would like your colleagues to know (promotion, first job, award, paper published, new patent, position available, position wanted, ...) to Newsletter Editor Dr. Maria Kriz at [Maria.Kriz@srnl.doe.gov](mailto:Maria.Kriz@srnl.doe.gov).

## SS&amp;T Fall 2021 Symposium

## CALL FOR ABSTRACTS



Division of Industrial and Engineering Chemistry  
American Chemical Society Symposium

## Symposium on

## Advanced Separation Technologies for Green Chemistry

262<sup>th</sup> ACS National Meeting & Exposition, August 22- August 26,  
2021, Atlanta, GA

For the industry, almost all chemical industry systems have separate unit operations, which are used for raw material pretreatment, product separation, product purification, and waste disposal, etc. However, there are still some challenges such as excessive equipment investment, high energy consumption and environmental pollution for traditional separation engineering. Hence, advanced separation technologies for green chemistry are nowadays commonly mentioned as the most promising development paths for the chemical process industry and the most important progress areas for chemical engineering research. Symposium features research and development on advanced separation technologies for green chemistry to successfully address the challenges we face. **Abstract submission due date: April 12th, 2021 (11:59 EST)**. Topics include, but are not limited to:

## Advanced coupling separation technology:

- Reactive/extractive distillation
- Membrane-assisted separation
- Reaction-membrane coupling
- Supercritical-absorption/extraction

## Novel material and equipment:

- Ionic liquids/DES in separation
- New adsorbents for separation
- Membrane materials
- New tray and packing design

## Microchemical technology:

- Microdevice-based absorption/distillation process
- Microdevice-based extraction process
- Microdevice-based reaction-extraction
- Transfer phenomena in microdevice

## External field synergy separation:

- Microwave-assisted separation
- Highgravity-assisted separation
- Ultrasound-assisted separation
- Electric field, magnetic field, etc

Submit the abstracts at <https://callforabstracts.acs.org/acsfall2021/I&EC>

## Organizers

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## 2021 Actinide Separations Conference

The [Actinide Separations Conference](#) will be held virtually May 18-20, 2021, and will be hosted by Pacific Northwest National Laboratory. Registration and the call for abstracts are open.

This is a forum where scientists and engineers present and discuss problems, experiences, results of research in progress, and other matters of interest concerning development, testing, and application of actinide and fission product separations chemistry and engineering.

Conference topics include:

- Actinide and lanthanide separations
- Speciation and redox chemistry of actinide elements
- Used nuclear fuel reprocessing
- Pyrochemical processing of *f*-elements
- *f*-element chemistry in molten salts and ionic liquids
- Fission product chemistry as it relates to actinide separations
- Medical isotopes production and separations
- Actinide forensics
- Safeguards and analytical developments

Early registration costs \$75 through March 31, then is \$100. There are additional registration discounts for students and retirees.

Abstracts are due April 1, as are nominations for the Glenn T. Seaborg Actinide Separations Award. The submission forms are found on the website.

Find more details on the [Actinide Separations Conference event website](#). For program questions or sponsorship opportunities, contact Gregg Lumetta ([gregg.lumetta@pnnl.gov](mailto:gregg.lumetta@pnnl.gov), 509-375-5696) or Gabe Hall ([gabriel.hall@pnnl.gov](mailto:gabriel.hall@pnnl.gov), 509-375-5716).

Event URL:

<https://pnnl.cvent.com/events/actinide-separations-conference-2021/event-summary-42ee392ba87049268862201c5175a17d.aspx>

Alternate URL on the PNNL Events web page:

<https://www.pnnl.gov/events/actinide-separations-conference>