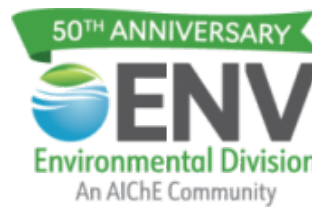


MARCH 8, 2024

AIChE Environmental Division Newsletter



SPRING 2024

Dear Colleagues,

Welcome to the first division newsletter of 2024. I am Matthew Alexander and am I am serving as the Division Chair for our Environmental Division of AIChE for this calendar year. I wish to first thank our past two division chairs, Kerry Kelly and Alexander Orlov, for their hard work in getting our division moving in a positive direction with regards to finances. One important aspect has been the development of an endowed fund to continually finance our most prestigious division award, the Cecil Award, which serves to recognize each year one individual for outstanding chemical engineering contributions in the preservation or improvement of the environment. I hope you will consider contributing to the effort to endow this particular award this year. You may find a link to give at our division webpage -- <https://www.aiche.org/community/sites/divisions-forums/environmental-division> or you will have the opportunity to contribute at the time of your membership renewal.



I wish to introduce you to our newest leaders in the division, Dr. Jason Trembly, 2nd vice-chair, and our new directors (three-year terms) Dr. Sage Hiibel and Dr. Ana Torres. You can find the names of all our division leaders at <https://www.aiche.org/community/sites/divisions-forums/environmental-division/leadership>. And I also wish to thank for their service the two directors who have just completed their three-year term, Dr. Yinlun Huang and Dr. Marwa El-Sayed.

This year, we plan to continue our webinar programming and to find new ways of serving you better. In particular, we have formed an industrial advisory board to help identify ways in which our division can best serve the needs of industrial members of the division. Additionally, we are continually striving to update our programming for the national meetings. If you have any ideas and are interested in getting involved, please send an email to me or any members of our Executive Committee. Information on the upcoming division webinars can be found at either <https://www.aiche.org/community/sites/divisions-forums/environmental-division/webinars-0> or at our division's LinkedIn page <http://linkedin.com/company/aiche-environmental-division/>

I am looking forward to working with you all this year in our Environmental Division of AIChE.

Matthew Alexander
AIChE Environmental Division Chair (2024)

Newsletter Highlights

**Letter from the Chair:
Dr. Matthew Alexander**

**2024 Division
Leadership**

**2024
Environmental Division
Webinars**

**2024
Awards Nomination**

**2024
Environmental Division
Endowment fund**

**2024
Environmental Division
Programming Update**

**Update from Prof. Martin
Abraham,
Editor of Environmental
Progress & Sustainable
Energy**

**Interview of Cecil Award
winner Dr. Michael S.
Wong**

2024 LEADERSHIP

Chair: Dr. Matthew Alexander, PE
1st Vice-Chair: Dr Kirti Maheshkumar Yenkie, PhD
2nd Vice-Chair: Dr. Jason Trembly
Past Chair: Dr. Kerry Kelly
Secretary: Dr. Robert Peters
Treasurer: Dr. Gerardo J Ruiz-Mercado
Director: Dr. Sage Hiibel
Director: Coty Jen
Director: Mr. David A Russell
Director: Dr. Shweta Singh
Director: Prof. Ana I. Torres
Director: Dr. Michael Wong
[AIChE Environmental Division Leadership Webpage](#)

2024 DIVISION WEBINARS DECARBONIZATION AND SUSTAINABLE SOLUTIONS

The following seminars were organized by the division in 2024 and are freely available to all Environmental Division members.

1) Christos Maravelias, Princeton University– March 25

[Register link](#)

To see more info and the link to register, please click the following link:

<https://www.aiche.org/community/sites/divisions-forums/environmental-division/webinars-0>

2024 AWARDS NOMINATION

Please see the [AIChE Environmental Division awards webpage](#) to nominate members for the following awards before due date.

Lawrence K. Cecil Award in Environmental Chemical Engineering; Due date: June 1st, 2024
[Detail link about the award](#)

Dr. Peter B. Lederman Environmental Division Service Award; Due date: June 1st, 2024
[Detail link about the award](#)

Environmental Division Early Career Award; Due date: June 1st, 2024
[Detail link about the award](#)

Environmental Division Graduate Student Paper Award; Due date: July 1st, 2024
[Detail link about the award](#)

Environmental Division Undergraduate Student Paper Award; Due date: July 1st, 2024
[Detail link about the award](#)

2024 ENVIRONMENTAL DIVISION ENDOWMENT FUND

We're pleased to announce the Environmental Division Endowment Fund. The fund will support the Lawrence K. Cecil Award in perpetuity. The Cecil award recognizes an AIChE member for their outstanding chemical engineering achievements in the preservation or improvement of the environment. Our goal is to raise \$50,000. [Join us with your gift today!](#)

Environmental Division Programming Update 2024

Spring is almost here, and with it comes the eagerly anticipated AIChE Spring Meeting alongside the 20th Global Congress on Process Safety. From **March 24 to March 28, 2024**, industry leaders, researchers, and professionals will converge at the New Orleans Ernest N. Morial Convention Center in New Orleans, LA, for an unparalleled exploration of the latest trends and innovations in chemical engineering and process safety.

At this Spring meeting, the Environmental Division will be hosting a panel of experts to address the critical issue of climate change. As climate-related challenges escalate and extreme weather events become more frequent, there is a growing demand for guidance from chemical engineers across various industries. This includes professionals specializing in environmental and legal aspects, all of whom play vital roles in navigating and preparing for these events. In this panel session, engineers will share their perspectives on approaching extreme weather events and natural disasters from resilience, environmental, and legal viewpoints.

In addition, you can join us for the highly anticipated sessions hosted by the Environmental Division at the Annual AIChE meeting in San Diego, CA, from **October 27 to 31, 2024**. Dive into a diverse range of topics, including the design and analysis of carbon capture technologies, emerging frontiers in environmental engineering, sustainable solutions for waste plastic management, among other topics. Here, we will explore fundamental principles and applications in environmental kinetics, water reuse, atmospheric chemistry, and more. From energy systems optimization to the remediation of emerging contaminants, these sessions offer invaluable insights into the latest advancements shaping the future of environmental chemical engineering. Please remember to submit your abstracts <https://www.aiche.org/conferences/aiche-annual-meeting/2024/2024-call-abstracts-information> before **Monday April 8, 2024 at 11:59 PM ET**.

Exciting news for this Annual Meeting! We're planning to introduce two new sessions focusing on Per- and Polyfluorinated Substances (PFAS) treatment and analysis, as well as research papers on microplastics ecosystem impacts and mitigation strategies. Stay tuned for more details on these groundbreaking sessions, which will provide cutting-edge insights into addressing some of the most pressing environmental challenges of our time.

Do you have ideas for new sessions? Are there specific topics you'd like to see covered? We invite you to share your suggestions and proposals for session topics that would enrich our program and address emerging trends in environmental chemical engineering. Additionally, if you're interested in co-chairing sessions, we'd love to hear from you. Please don't hesitate to reach out with your feedback, proposals, or expressions of interest. You can email the Environmental Division programming vice chair, Dr. Dora Lopez de Alonzo, at dora.e.lopez.de.alonzo-1@ou.edu. Don't miss this opportunity to engage with leading experts and expand your knowledge in this dynamic field!

Update from Prof. Martin Abraham, Editor of Environmental Progress & Sustainable Energy

Environmental Progress & Sustainable Energy continues to do well as we move into our 43rd year. We had over 1,000 submissions in 2023 and published 314 articles. Most articles move from submission to first decision within 90 days and are published using the early view feature within 10 days of acceptance. We continue to maintain an inventory of approximately 2.5 issues of manuscripts in early view, a typical level of content demonstrating a healthy journal. Also in 2023 we added new manuscript categories in climate change and environmental justice, reflecting the changing landscape in which we operate. The impact factor of the journal increased to 2.8 in 2022 (reported during 2023), representing an all-time high for the journal and placing us about midway in quality metrics for all journals publishing in the environmental area. As we have done for the past several years, EP&SE is publishing the policy papers produced by our WISE (Washington Internships for Students in Engineering) participants, highlighting the connection between the journal and other AIChE activities. US based authors have the highest acceptance rate of all manuscript submissions, however, the number of contributions continues to lag behind those from India, China, and other Asian nations. Reflecting our roots as a publication of the Environmental Division, we would welcome opportunities to collaborate more closely and consider manuscripts from members, and especially our industrial members. Please consider expanding your AIChE presentations into full journal submission for consideration. Please visit our webpage (<https://aiche.onlinelibrary.wiley.com/journal/19447450>) for more information about the journal and submission instructions.

Interview with Cecil Award Winner Dr. Michael S. Wong



How did you get involved in the environmental aspects of chemical engineering?

I was in college when I wanted to learn more about how to "do" chemical engineering outside of what I was learning about the chemical industry and chem. eng. fundamentals. I loved math and chemistry – that's why I chose chemical engineering to study. But clean water was not an obvious topic to study; it was something that just appealed me. I took a course on environmental chemistry, which really got me to think about water, colloidal suspensions, and aquatic chemistry, which then led me down the rabbit hole of aerosols and nanotechnology, and then back to materials and catalysis! This exposure informs and drives my research interest in developing clean water technologies through catalytically destructive means.

Which people or programs in our field have been the most influential to you and your path?

Michael Hoffmann was the professor who taught the environmental chemistry course (and who later took me into his research group as a student researcher) that opened up my eyes to the possibilities that an aspiring chemical engineer like myself can make on the environment. Rick Flagan was another Caltech professor who showed me how chemical engineers have a different perspective and set of tools to address environmental problems. I did research with him as well. They were the ones who gave me the confidence to take the road less traveled, research-wise, way back in the beginning. My college chem. eng. profs, like Julie Kornfield, Frances Arnold, and Mark Davis, were super influential on how I teach and research.

What are, in your opinion, the most interesting contributions you've made so far?

Like "chapters" of a long novel still being written, I think of the "TCE" chapter as being the first one to show how nanoparticles can destroy this carcinogenic molecule in its unnatural habitat (water) through heterogenous catalysis. We were really interested in figuring out how the nanostructure changes the efficacy for this reaction when we discovered the most active structure was two orders more active than the conventional material. We applied the catalyst design principles to address nitrogen-containing contaminants, like nitrite and nitrate anions. And the ideas worked! The decorated metal catalyst structure (with a different composition) worked to degrade these anions into N₂. In this nitrate chapter, we are working with our NEWT Center partners to scale-up the treatment process. We recently began working on a new chapter, this time on "forever chemicals," another class of carcinogenic compounds that are found around the world. All of these efforts are grounded in a deep understanding of the catalyst material to carry out the catalytic decomposition reactions on its surface.

What do you see as opportunities for Chemical Engineering researchers to contribute to addressing our global need for clean water?

Chemical engineers have all the tools to invent and develop technologies to generate clean water. They have contributed to membrane separations to take out the salts in saline water. Destroying, instead of displacing, contaminants from water (in whatever waters that are out there, like surface water, groundwater, brackish water, seawater, produced water) will open up new water sources, and un-strain the demand of drinkable water for commercial purposes. Technologies that can be deployed readily and cheaply would make access to clean water more equitable, raising the quality of life and health around the world.

Are there new directions that you see as particularly important or interesting?

Clean water and clean energy go together, and the energy transition R&D, driven by current unsustainable practices, will ensure full attention from industry and people for decades to come. Converting water-borne contaminants into high-value products, and pulling out very diluted elements from water sources, can make the economics of cleaning water attractive.