

November Section Meeting: Biorefining as America's Newest Frontier

Research in my lab addresses the unique requirements inherent to biomass valorization and seeks to explore the Frontiers in Biorefining. In the first portion of my talk, I will introduce a conceptual framework for biorefining. Then, I will discuss the centerpiece of my laboratory's research, which is catalytic transfer hydrogenolysis of whole biomass as a new biorefining technology. Using this technology, isolating high-quality and high-purity lignin-derived monomers will be possible. Finally, I will discuss using these lignin monomers as a feedstock for new soft materials. For example, these materials can be engineered into photopolymerizable resins and employed as UV-curable coatings for wood products or feedstocks for stereolithography-based 3D printing. Overall, the combination of catalytic deconstruction and judicious chemical modification of woody and agricultural biomass affords a new material platform, which enables production of new bio-advantaged soft materials.

November Section Meeting

Topic: Biorefining as America's Newest Frontier

Speaker: Stephen C. Chmely, PhD,
Department of Agricultural
and Biological Engineering at
Penn State University

Date: Tuesday, November 9th

Time: 6:00 – Career Discussion
6:15 – Presentation and Q & A

Cost: Free, Registration Required

Location: Online Zoom meeting

REGISTRATION REQUIRED.
More information can be found on
our [website](#).

[Register](#)

After you register, you will receive instructions via email for joining the meeting.



Speaker Biography: Dr. Stephen Chmely is an Assistant Professor of Agricultural and Biological engineering at Penn State. Dr. Chmely's research involves catalytic transformations of biomass and biomass fractions to produce innovative platform molecules. Work in his lab also focuses on producing novel bio-based soft materials that are relevant to additive manufacturing and 3D printing. Steve received an AS in Chemistry from Volunteer State Community College (Gallatin, TN, Go Pioneers!) in 2003, a BS in Chemistry and Physics from Western Kentucky University (Bowling Green, KY, Go 'Tops!) in 2006, and a PhD in synthetic inorganic chemistry from Vanderbilt University (Nashville, TN, Go 'Dores!) in 2010. He spent 2 years as a postdoctoral research associate at the National Renewable Energy Laboratory in Golden, CO, where he studied lignin valorization strategies, and 6 years as a

Research Assistant Professor at the University of Tennessee's Center for Renewable Carbon. In addition to his research projects, Dr. Chmely is interested in in-reach and outreach efforts to enable the meaningful participation of women and underrepresented groups in STEM. He lives with his wife, daughter, and cat in Happy Valley, and enjoys cooking and playing the piano in his spare time.

Register Today for Future City in Colorado – as a Mentor or Judge

What is Future City? Future City is a project-based learning program where students in 6th, 7th, and 8th grades imagine, research, design, and build cities of the future. See more [HERE](#) about Future City. This program cycle, Future City challenges 6th, 7th & 8th grade students to: Design a waste-free city using the principles of a circular economy. What is a circular economy? It is a sustainability approach based on nature's circular system and the idea of designing waste out of the production process. [Learn More Here!](#)

Student teams work with their educator and STEM mentor to create their competition deliverables:

- Essay: 1,500 words to describe their future city.
- Model: Teams get creative and build one model or multiple model segments to show off different parts of their city.
- Project Plan: Keeps students organized and on top of all the details.
- Presentation Video: Students showcase their city in a short video.
- City Q&A: Impress judges with their knowledge!

Mentors - Sign up for Future City and pass along your professional STEM experience and knowledge to students.

Judges - Sign up for Future City and be amazed at students' innovative solutions. Note: It is too early to confirm if the regional competition will be in-person or virtual - stay tuned! I am ready to sign up! [Let's start my registration.](#)

AIChE Meetings

2021

- Nov 2-4 [3rd Global Symposium on Waste Plastic](#)
Virtual
- Nov 3-5 [4th Int'l Conference on Microbiome Engineering](#)
Virtual
- Nov 7-19 [2021 AIChE Annual Meeting](#)
Boston Nov 7-11
Virtual Nov 15-19
- Nov 15-17 [5th Int'l Conference on Plant Synthetic Biology, Bioengineering & Biotechnology](#)
Virtual
- Dec 1-3 [4th Water Conference](#)
Virtual
- Dec 3 [8th Int'l Conference on Stem Cell Engineering 2021](#)
Virtual

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The objectives of AIChE are to advance chemical engineering in theory and practice, to maintain a high professional standard among its members, and to serve society, particularly where chemical, engineering can contribute to the public interest.
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MEETING SCHEDULE

The Rocky Mountain Local Section (RMLS) of AIChE generally meets the second or third Tuesday of every month, September through May.

VOLUNTEER AS A YOUNG PROFESSIONAL LIAISON (YPL)

We are looking for Young Professional Liaisons for each state – CO, NM, WY, SD & MT. Please send nominations to any section officer listed above.