

# 2023 / AIChE ANNUAL MEETING

November 5 - 10, 2023  
Hyatt Regency Orlando • Orlando, FL

## SUSTAINABILITY USERS GUIDE



**LEADING**  
THE WAY TO A  
**SUSTAINABLE**  
**FUTURE**



# BECOME A MEMBER

AIChE's **Institute for Sustainability (IfS)** is a member-driven organization that aids in pushing the sustainability profession forward, engaging the community, and defining excellence across the field. IfS provides multidisciplinary scientific rigor and research for sustainability discussions, encourages the incorporation of sustainability concepts in engineering education, and facilitates the development of measurement tools to guide the design of more sustainable products and processes.



As a member of IfS, you will enjoy a vast array of opportunities to communicate with leading international engineers, researchers, academics and scientists. Connect for ideas, inspiration, and technical information.

- **Technical Resources** - Keep apprised of new developments in the chemical engineering profession through our CEP magazine, AIChExchange and SmartBrief electronic newsletters, as well as Journals published in partnership with Wiley.
- **Exclusive Technical Content** - Access scientific and technical opportunities and research for sustainability discussions. IfS approaches sustainability from the perspectives of engineering and scientific disciplines to promote the societal, economic, and environmental benefits of sustainable and green engineering.
- **Conferences** - Get the lowest rates on future conference registrations (both virtual and in-person).
- **Education** - Build new technical knowledge and skills through live and archived webinars, credentials as well as self-paced eLearning courses.
- **Advance Your Career** - Whether you are actively searching or just researching possibilities, CareerEngineer is the leading e-recruitment source for chemical engineers at every level, in every field.
- **AIChE Engage** - Cultivate meaningful professional relationships through AIChE Engage, the mobile-friendly community discussion platform.
- **Students** - Get all the up-to-date information on grants and sponsorship opportunities to support your registration to present at any of the IfS conferences. Take part in the next dedicated Poster and Short Talk Session to network with leading professionals in your field of study.

**Join today!**

[www.aiche.org/ifs/membership](http://www.aiche.org/ifs/membership)

The **Sustainable Engineering Forum** promotes Sustainable Engineering and Sustainable Development in an inclusive forum.

This technical forum is open to all disciplines to promote technical and professional development with a focus on sustainability principles and practice.

More information at: [www.aiche.org/sef](http://www.aiche.org/sef)



# ANNUAL MEETING HIGHLIGHTS

## FEATURED PROGRAMMING Be sure to attend these conference highlights –

### MONDAY, NOVEMBER 6, 2023

#### Featured MPC Session: Sustainability and the Circular Economy Panel Discussion\*

11:00 AM – 12:20 PM

Plaza International Ballroom G/H, Hyatt Regency Orlando

### TUESDAY, NOVEMBER 7, 2023

#### Topical Plenary: Frontiers in Green Process and Product Engineering

8:00 AM – 10:30 AM

Bayhill 18, Hyatt Regency Orlando

#### Sustainable Engineering Forum Plenary

8:00 AM – 10:30 AM

Regency Ballroom V, Hyatt Regency Orlando

#### 2023 Andreas Acrivos Award for Professional Progress in Chemical Engineering Lecture

11:15 AM – 12:15 PM

Plaza International Ballroom G/H, Hyatt Regency Orlando

#### Charge Neutral Polymer Complexes as Battery Components

Rachel A. Segalman, *University of California, Santa Barbara*

#### Topical Plenary: Environmental Analytical Technology: Sensor Applications in Sustainability

12:30 PM – 3:00 PM

Celebration 16, Hyatt Regency Orlando

#### Plenary Session: Waste Plastics

12:30 PM – 3:00 PM

Rainbow Spring I/II, Hyatt Regency Orlando

### WEDNESDAY, NOVEMBER 8, 2023

#### John M. Prausnitz AIChE Institute Lecture

11:15 AM – 12:15 PM

Plaza International Ballroom G/H, Hyatt Regency Orlando

#### Translation of Biomedical Microtechnologies from the Lab to the Clinic

Mark R. Prausnitz, *Georgia Institute of Technology*

#### SBE's James E. Bailey Award Lecture

4:30 PM – 5:30 PM

Plaza International Ballroom G/H, Hyatt Regency Orlando

#### Can biotechnology deliver cost effective fuels with reduced carbon footprint?

Gregory Stephanopoulos, *Massachusetts Institute of Technology*

# SUSTAINABILITY PROGRAM GRID

TIME	SESSION #	SESSION TITLE	PROPERTY	ROOM
<b>SUNDAY, NOVEMBER 5</b>				
3:30 PM	98	CO <sub>2</sub> Capture for Industrial Point Sources	Hyatt	Regency Ballroom T
<b>MONDAY, NOVEMBER 6</b>				
8:00 AM	12	Sustainable Pathways to Clean Hydrogen and Synthetic Fuels I	Hyatt	Columbia 36
8:00 AM	104	Decarbonization for Alkene Production*	Hyatt	Bayhill 27
8:00 AM	105	Advances in Algae Cultivation, Conversion and Products	Hyatt	Regency Ballroom T
8:00 AM	186	Concentrated Solar Power Generation and Chemical Processing I	Hyatt	Regency Ballroom V
8:00 AM	253	Efficient Processing of Lignin to Bioproducts and Biofuels	Hyatt	Bayhill 18
8:00 AM	257	Model Based Design and Optimization for Hybrid Materials and Interfaces	Hyatt	Celebration 10
8:00 AM	315	Sensors and Monitoring for Health	Hyatt	Celebration 16
8:00 AM	444	Sustainable Management and Uses of Post-Consumer Materials and Waste	Hyatt	Regency Ballroom U
8:00 AM	496	Fuel and Energy Decarbonization	Hyatt	Regency Ballroom O
11:00 AM	14	Featured MPC Session: Sustainability and the Circular Economy Panel Discussion*	Hyatt	Plaza International Ballroom G/H
12:30 PM	24	Materials Interfaces - Celebrating the Career of John Ekerdt	Hyatt	Celebration 10
12:30 PM	111	Advances in Biofuels Production and Alternative Fuels I*	Hyatt	Challenger 38/39
12:30 PM	115	Sustainable Pathways to Clean Hydrogen and Synthetic Fuels II	Hyatt	Columbia 36
12:30 PM	188	Emerging Frontiers in Environmental Chemical Engineering*	Hyatt	Rainbow Spring I/II
12:30 PM	195	Climate Change and Engineering Sustainability	Hyatt	Regency Ballroom U
12:30 PM	264	Concentrated Solar Power Generation and Chemical Processing II	Hyatt	Regency Ballroom V
12:30 PM	320	Decarbonization for Methanol Production*	Hyatt	Bayhill 27
12:30 PM	365	Student Competition in Sensors (Sponsored)	Hyatt	Celebration 16
12:30 PM	406	Materials for Thermochemical and Electrochemical Energy Storage	Hyatt	Bayhill 18
12:30 PM	407	Transport and energy processes at electrochemical interfaces I*	Hyatt	Celebration 11
12:30 PM	446	Biodegradable Polymers from Renewable & Waste Resources and Biocomposites from Industrial Coproducts and Natural Fibers*	Hyatt	Discovery 46
12:30 PM	548	Sustainable approaches for chemical production	Hyatt	Regency Ballroom O
3:30 PM	31	Poster Session: Decarbonization by Electrification	Hyatt	Regency Ballroom R/S
3:30 PM	36	Feedstock Conversion Interface Consortium – Understanding Feedstock Variability to Enable Next Generation Biorefineries (Invited Talks)	Hyatt	Regency Ballroom T
3:30 PM	121	Leadership and Management of Sustainable Solutions in Industry*	Hyatt	Bayhill 17
3:30 PM	125	Big Data and Analytics for Sustainability	Hyatt	Regency Ballroom U

\*This session is co-sponsored by one or more programming groups.

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TIME	SESSION #	SESSION TITLE	PROPERTY	ROOM
3:30 PM	126	Material Interfaces for Clean Energy: Fundamentals and Applications	Hyatt	Celebration 10
3:30 PM	200	Advances in Biofuels Production and Alternative Fuels II*	Hyatt	Challenger 38/39
3:30 PM	201	Conversion of plastic wastes to high value products	Hyatt	Bayhill 18
3:30 PM	202	Decarbonization for Ammonia Production*	Hyatt	Bayhill 27
3:30 PM	205	Sustainable Pathways to Clean Hydrogen and Synthetic Fuels III	Hyatt	Columbia 36
3:30 PM	269	Next-Gen Sensors	Hyatt	Celebration 16
3:30 PM	325	Concentrated Solar Power Generation and Chemical Processing III	Hyatt	Regency Ballroom V
3:30 PM	450	Transport and energy processes at electrochemical interfaces II*	Hyatt	Celebration 11
3:30 PM	565	Sustainable Energy: Generation and Storage*	Hyatt	Regency Ballroom O
3:30 PM	711	CSPI Townhall - Climate Change Policy*	Hyatt	Silver Spring I/II
<b>TUESDAY, NOVEMBER 7</b>				
8:00 AM	40	Topical Plenary: Frontiers in Green Process and Product Engineering (Invited Talks)	Hyatt	Bayhill 18
8:00 AM	44	Sustainable Engineering Forum Plenary Ses-sion (Invited Talks)	Hyatt	Regency Ballroom V
8:00 AM	131	Waste Plastic - Recycle, Reuse and Remedia-tion Strategies I*	Hyatt	Rainbow Spring I/II
8:00 AM	132	Sustainability in the Pharmaceutical Industry (Invited Talks)*	Hyatt	Celebration 6
8:00 AM	133	Decarbonization by Electrification	Hyatt	Regency Ballroom O
8:00 AM	212	Material Interfaces for Energy Applications *	Hyatt	Celebration 10
8:00 AM	213	Field-Deployable Sensors	Hyatt	Celebration 16
8:00 AM	277	Decarbonization for Hydrogen/Chemicals production and CO <sub>2</sub> valorization *	Hyatt	Bayhill 27
8:00 AM	279	Sustainable Pathways to Clean Hydrogen and Synthetic Fuels IV	Hyatt	Columbia 36
8:00 AM	331	Frontiers in New Materials and Membranes for Bioseparations*	Hyatt	Coral Spring I/II
8:00 AM	332	Feedstock Logistics for Biorefineries	Hyatt	Regency Ballroom T
8:00 AM	369	Developments in Electrochemical Reactors, Fuel Cells, and Electrolyzers I*	Hyatt	Columbia 37
9:00 AM	715	Public Affairs and AIChE: A PAIC Town Hall*	Hyatt	Atlantic
12:30 PM	48	Design and Analysis of Sustainable Carbon Capture and Emissions Control Technologies I*	Hyatt	Blue Spring I/II
12:30 PM	56	Topical Plenary: Environmental Analytical Technology: Sensor Applications in Sustaina-bility (Invited Talks)	Hyatt	Celebration 16
12:30 PM	57	Plenary Session: Waste Plastics (Invited Talks)	Hyatt	Rainbow Spring I/II
12:30 PM	139	Breakthroughs in Sustainable Chemical Production and Process	Hyatt	Bayhill 18
12:30 PM	221	Biological Conversions and Processes for Renewable Feedstocks	Hyatt	Regency Ballroom T
12:30 PM	222	Decarbonization by Electrification: Reactors & Reactions 1	Hyatt	Regency Ballroom O

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12:30 PM	286	Design for Circular Economy	Hyatt	Regency Ballroom U
12:30 PM	335	Plasma Catalysis	Hyatt	Celebration 10
12:30 PM	336	Sustainable Pathways to Clean Hydrogen and Synthetic Fuels V*	Hyatt	Columbia 36
12:30 PM	417	Developments in Electrochemical Reactors, Fuel Cells, and Electrolyzers II*	Hyatt	Columbia 37
12:30 PM	500	Special Topics in Crystallization: Energy, Sustainability, and Amorphous Precipitation*	Hyatt	Manatee Spring II
12:30 PM	514	Novel Approaches to CO <sub>2</sub> Utilization I	Hyatt	Regency Ballroom V
3:30 PM	68	Advances in Life Cycle Assessment	Hyatt	Regency Ballroom U
3:30 PM	153	General Poster Session in Sensors	Hyatt	Regency Ballroom R/S
3:30 PM	154	Poster Session: Waste Plastics	Hyatt	Regency Ballroom R/S
3:30 PM	156	Design and Analysis of Sustainable Carbon Capture and Emissions Control Technologies II*	Hyatt	Blue Spring I/II
3:30 PM	291	Chemical and Catalytic Conversions and Processes for Renewable Feedstocks	Hyatt	Regency Ballroom T
3:30 PM	292	Decarbonization by Electrification: Reactors & Reactions 2	Hyatt	Regency Ballroom O
3:30 PM	339	Integrated Process Engineering and Economic Analysis	Hyatt	Bayhill 18
3:30 PM	533	Novel Approaches to CO <sub>2</sub> Utilization II	Hyatt	Regency Ballroom V
3:30 PM	712	Process Electrification Panel - Co-Organized by EPIXC*	Hyatt	Windermere Ballroom W
4:30 PM	713	Process Electrification Roundtable Discussions - Co-Organized by EPIXC*	Hyatt	Windermere Ballroom W
<b>WEDNESDAY, NOVEMBER 8</b>				
8:00 AM	298	Conversion of Waste Plastic into Liquid Fuels	Hyatt	Rainbow Spring I/II
8:00 AM	343	Developments in Alternative Fuels and Enabling Technologies*	Hyatt	Challenger 38/39
8:00 AM	344	Decarbonization by Electrification: Reactors & Reactions 3	Hyatt	Regency Ballroom O
8:00 AM	427	Production of Low-carbon Fuels from Biomass: Design, Simulation, and Economic Analysis	Hyatt	Regency Ballroom T
8:00 AM	428	Resilient and Sustainable Supply Chains and Product Systems	Hyatt	Regency Ballroom U
8:00 AM	455	New processes for efficient CO <sub>2</sub> capture and utilization under mild conditions	Hyatt	Bayhill 18
8:00 AM	457	Engineering Geologic Carbon Dioxide Storage Systems I	Hyatt	Regency Ballroom V
8:00 AM	516	Catalytic and Thermochemical Conversion of Lignocellulosic Materials I*	Hyatt	Discovery 46
12:30 PM	239	Analysis and Assessment for Solving the Plastic Waste Crisis	Hyatt	Rainbow Spring I/II
12:30 PM	388	Ionic Liquids: Novel Separation, Catalytic reaction and Electrochemical Processes	Hyatt	Bayhill 18
12:30 PM	390	Life Cycle Analysis of Bio-Based Fuels, Energy, and Chemicals	Hyatt	Regency Ballroom T

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12:30 PM	391	Decarbonization by Electrification: Separations	Hyatt	Regency Ballroom O
12:30 PM	484	Engineering Geologic Carbon Dioxide Storage Systems II	Hyatt	Regency Ballroom V
12:30 PM	536	Catalytic and Thermochemical Conversion of Lignocellulosic Materials II*	Hyatt	Discovery 46
12:30 PM	585	Interfacial Phenomena in Energy and Sustainability*	Hyatt	Regency Ballroom P
3:30 PM	86	Poster Session: Sustainability Science and Engineering, Biorefineries, and Energy*	Hyatt	Regency Ballroom R/S
3:30 PM	243	Sustainable Fuel from Renewable Resources*	Hyatt	Silver Spring I/II
3:30 PM	354	Recycling and Upcycling of Plastic Waste	Hyatt	Rainbow Spring I/II
3:30 PM	432	Decarbonization by Electrification: Systems & Policy	Hyatt	Regency Ballroom O
<b>THURSDAY, NOVEMBER 9</b>				
8:00 AM	398	Design, Analysis, and Optimization of Sustainable Energy Systems and Supply Chains I	Hyatt	Plaza International Ballroom K
8:00 AM	399	Process Design: Innovation for Sustainability	Hyatt	Plaza International Ballroom J
8:00 AM	486	Value-Added Biorefinery Co-Products	Hyatt	Plaza International Ballroom I
8:00 AM	507	Integrated Biorefineries: Technologies and TEA/LCA I*	Hyatt	Bayhill 29
12:30 PM	356	Applied Math for Energy and Environmental Applications*	Hyatt	Bayhill 23
12:30 PM	358	Materials and Devices: From Energy Generation to Efficient Usage*	Hyatt	Celebration 9
12:30 PM	359	Green Chemistry and Engineering-I	Hyatt	Plaza International Ballroom J
12:30 PM	438	Design, Analysis, and Optimization of Sustainable Energy Systems and Supply Chains II	Hyatt	Plaza International Ballroom K
12:30 PM	466	Reactor Engineering for Biomass Feedstocks	Hyatt	Plaza International Ballroom I
12:30 PM	526	Integrated Biorefineries: Technologies and TEA/LCA II*	Hyatt	Bayhill 29
3:30 PM	401	Materials for Effective Energy Storage*	Hyatt	Celebration 9

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