

# PRELIMINARY PROGRAM



## 41<sup>ST</sup> INTERNATIONAL CONFERENCE ON THERMAL TREATMENT TECHNOLOGIES & HAZARDOUS WASTE COMBUSTORS

February 26-27, 2025  
Hyatt Regency Tulsa Downtown • Tulsa, OK  
[www.awma.org/IT3](http://www.awma.org/IT3)



Sponsored by:



# PRELIMINARY PROGRAM

## General Information

### Conference Overview

Now in its 41<sup>st</sup> year, this conference provides a forum for the discussion of state-of-the-art technical information, regulations, and public policy on thermal treatment technologies and their relationship to air emissions, greenhouse gases, sustainability, and climate change.

### Location

#### Hyatt Regency Tulsa Downtown

100 East Second Street  
Tulsa, OK 74103  
Phone: 918-234-1234

Hotel block cut-off is January 28. Book your hotel reservations at [www.awma.org/it3location](http://www.awma.org/it3location).

### Registration and Refund Policy

Register online at [www.awma.org/IT3](http://www.awma.org/IT3) and save on fees if you register by the advance deadline of January 28. Conference check-in and badge pickup will be held in the Promenade CD Foyer at the Hyatt Regency Tulsa Downtown during the following hours:

Wednesday, February 26:	7:00 am – 5:00 pm
Thursday, February 27:	7:00 am – 3:30 pm

Cancellation and refund requests must be received in writing by January 28, 2025. After that date, no refunds will be issued for cancellations of any type, including no shows. All refunds will be subject to a \$100 USD administrative fee. Substitutions may be made at any time; payment for any difference is due at the time of substitution. This refund policy applies to all occurrences, including weather-related events and other natural disasters. In the unlikely occurrence of event cancellation, the Association is not liable for any expenses incurred by the registrant other than the full refund of registration fee(s) paid.

### A&WMA Meetings Policy

By registering for this meeting, attendees agree to abide by and accept the terms of the A&WMA Code of Conduct (available at [www.awma.org/governance](http://www.awma.org/governance)). Additionally, A&WMA conference attendees acknowledge that they may be photographed by A&WMA for promotional purposes while at events.

### IT3/HWC Conference Committee

**Technical Chair:** Cornelia Cretiu, *American Soda LLC*

**Technical Vice Chair:** Paulo Oliveira, *Fives Solios*

**Immediate Past Technical Chair:** Margarita Murach, *Process Combustion Corporation*

#### Program Advisory Committee Members:

William Norris, *Ramboll*

David Ostaszewski, *Alliance Technical Group*

### Presenter Details

All presenters should bring their presentation on a flash drive and load onto the conference laptop in Promenade D the morning of their session. Presenters should report to their presentation room at least 15 minutes prior to their session and plan to stay for the entire session.

### Conference Proceedings

Conference proceedings will include the secured PDF copies of the slides from presenters who have provided permission. The online proceedings will be posted a few weeks following the conference and attendees will be notified when the slides have been posted to a password-protected website.

### Continuing Education Units

Conference attendees may be eligible for continuing education credits and can apply to receive a Certificate of Participation for the sessions attended. Please sign the CEU sign-in sheet available at the registration desk and order your Certificate through the A&WMA Online Store. Members are eligible for free certificates. For more information, please contact Gloria Henning at +1-412-904-6021 or [glhenning@awma.org](mailto:glhenning@awma.org).

### Special Accommodations

The Air & Waste Management Association supports the Americans with Disabilities Act (ADA). Attendees requiring specific equipment, food, or services should contact Lisa Moses at [lmoses@awma.org](mailto:lmoses@awma.org) to make those needs known in advance. A&WMA will make every reasonable effort to accommodate them.

## Technical Tour

### Zeeco Global Technology Center – R&D and Test Facility Tour

**Tuesday, February 25**  
**2:00 pm - 5:00 pm**

Tour the Zeeco Global Technology Center (GTC), home to the world's largest industrial-scale combustion research and test facility. Located on Zeeco's 250-acre Broken Arrow, OK campus, the GTC is the first facility of its kind to be ISO-certified and is a proving ground for industry-leading combustion equipment and environmental solutions. Equipped with 17 test furnaces, multiple flaring stations, and fuel supply, storage, and blending capabilities, Zeeco's test facility can simulate nearly any plant's process conditions to evaluate equipment performance accurately. These tests generate comprehensive data that Zeeco combustion engineers analyze to adjust and refine equipment or firing conditions to meet desired performance requirements. Zeeco's test facility also has its own dedicated manufacturing process to ensure quick fabrication of test equipment without disrupting normal manufacturing workflows. On the way to the GTC, the tour will stop briefly at Zeeco's World Headquarters in Tulsa.

**Dress Code:** Closed toe shoes are required, and shorts are not permitted.

**Cost:** \$50 (includes transportation)

**Pre-registration required by January 28.**



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### Gold Sponsors & Tabletop Exhibitors



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### Bronze Sponsor



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### Tabletop Exhibitors

#### Alliance Technical Group

Alliance Technical Group, LLC (Alliance) is the premier environmental services and solutions company dedicated to helping clients achieve their environmental goals and navigate regulatory changes. With over 1,700 employees located in 50-plus offices across the U.S. and Canada, Alliance specializes in Environmental Compliance, On-site Testing and Monitoring, and Laboratory Testing and Analysis. Driven by innovation, committed to service, and focused on client success, Alliance delivers on the promise of reliability, results, and responsiveness. [www.alliancetechnicalgroup.com](http://www.alliancetechnicalgroup.com)

#### Christy Industrial Services

From Shotcrete, Brick and Cast Linings to Ceramic Fiber Systems, we are ready and able to meet your refractory construction needs. Based in Saint Louis, Missouri, Christy Industrial Services is a turnkey refractory installation contractor serving customers in the Midwest and throughout North America. Our team of skilled trade union masonry craftsmen and experienced project managers provide services including, but not limited to, Shotcrete, Gunnite, Ceramic Fiber Insulation, Castable, Fire Brick Linings, and Refractory Demolition. [www.christyindustrial.com](http://www.christyindustrial.com)

#### Dürr Systems, Inc.

Dürr Systems, Inc. designs and manufactures advanced solutions for efficient exhaust gas disposal, reduced energy consumption, and reliable processes. With over 50 years of expertise, Dürr's environmental technologies enable cost-effective, eco-friendly pollutant removal across industries. Its systems utilize processes such as thermal and catalytic oxidation, adsorption, and absorption to reduce emissions while meeting environmental regulations. Dürr offers an extensive portfolio of products; compliance with all environmental legislation; over 10,000 systems installed worldwide; consultancy tailored to individual industries; lifetime servicing; and global on-site support. Dürr delivers high-quality, energy-saving solutions from planning to servicing. [www.durr.com](http://www.durr.com)

#### Ecosystem Informatics Inc.

Ecosystem Informatics Inc. (ESI) offers a complete air monitoring solution from sensing to intelligence to help organizations make smarter sustainable decisions. Our AI-powered self-calibration means that our customers get continuous real-time measurements with terrestrial or aerial mobile platforms, complemented by a fixed platform. ESI mobile solutions can cover a very large area with high accuracy cost effectively. ESI provides actionable insights such as hotspot detection, alarms, and trends to enable organizations take the necessary actions. ESI is working with governments, NGOs, communities, and industries to promote sustainability through smarter, data-driven decision-making. [www.ecosinfo.ai](http://www.ecosinfo.ai)

# Technical Program – Wednesday, February 26

**7:00 am – 5:00 pm**  
Conference Registration  
Promenade CD Foyer

**7:00 am – 8:00 am**  
Continental Breakfast  
Promenade CD Foyer

**ALL TECHNICAL SESSIONS WILL BE HELD IN PROMENADE D**

## Opening Keynote

**8:00 am – 9:00 am**

### Welcome

Cornelia Cretiu, Conference Chair

### Keynote Presentation

Darton Zink, President and CEO, Zeeco, Inc.



Darton Zink

**9:00 am – 9:30 am**

### Networking Break and Display Viewing

Promenade CD Foyer

## Session 1: Advancements in Waste Processing

**9:30 am – 10:00 am**

IT3-13

### Hydrothermal Gasification of Nitrocellulose Fines for Energy Production

*Kathryn Gunderson, Aaron Petri, Stephen Cosper, Kathryn Guy, US Army Corps Construction Engineering Research Laboratory, Champaign, IL; Sulymar Arocho-Rodriguez, Edith Martinez-Guerra, USACE Environmental Laboratory, Vicksburg, MS*

**10:00 am – 10:30 am**

IT3-14

### Incline Rotary Gasifier for Military Waste Disposal

*Stephen Cosper, Bhumi Arahi, US Army Corps Construction Engineering Research Laboratory*

**10:30 am – 11:00 am**

IT3-11

### Comparison of Risk and Hazard Associated with the Open Burning of RDX Waste v an Engineered Device

*David Weeks, Timothy Oliver, Eastern Region, AKANA, Pasco, WA*

**11:00 am – 11:30 am**

IT3-29

### CO<sub>2</sub> Mineralization in Chlorellestadite Derived from Thermal Treatment of Waste-to-Energy Ashes

*Vikram Kumar, Aniruddha Baral, Mohamed Abdelrahman, Jeffrey R. Roesler, Nishant Garg, Department of Civil and Environmental Engineering, University of Illinois Urbana-Champaign, Urbana, IL*

**11:30 am – 12:00 pm**

### Exhibitor Presentations

**12:00 pm – 1:00 pm**

### Lunch

Promenade C

# PRELIMINARY PROGRAM

## Technical Program – Wednesday, February 26

### Panel: Advancements in Thermal Treatment of PFAS (Part 1)

**1:00 pm – 2:30 pm**

IT3-21

#### **Thermal Treatment of PFOS, PFOA and HFPO-DA Using a Pilot-Scale Combustor**

*Nathan Weber, Oak Ridge Institute for Science and Education (ORISE), Oak Ridge, TN; Jonathan Krug, Gabrielle West, James Mattila, William Roberson, R. Preston Burnette, Matthew Allen, William Preston, William Linak, U.S. Environmental Protection Agency, Center for Environmental Measurement and Modeling, Research Triangle Park, NC*

IT3-28

#### **Smoldering PFAS-Impacted Soils: From Laboratory to Full Scale Applications**

*Laura Kinsman, Gavin Grant, Grant Scholes, Benoit Boulay, Kyle Barber, Brian Harrison, David Major, Savron, Toronto, ON, Canada*

IT3-10

#### **PFAS Waste Destruction using GA's Industrial Supercritical Water Oxidation (iSCWO)**

*John Follin, General Atomics, San Diego, CA*

**2:30 pm – 3:00 pm**

#### **Networking Break and Display Viewing** Promenade CD Foyer

### Session 2: Advancements in Thermal Treatment of PFAS (Part 2)

**3:00 pm – 3:30 pm**

IT3-03

#### **The Future is What We Make It - Introducing Honeywell CFX™**

*Ke-Bin Low, Shawn Tanagho, Robert York, Honeywell UOP, Rosemont, IL*

**3:30 pm – 4:00 pm**

IT3-02

#### **Pyrolytic Conversions of Plastic Wastes to Reduce Carbon Pollution and for Carbon Sequestration**

*Mohammad Ruzlan Habib, El Jirie Baticados, Eunice Arzadon, Sergio Capareda, Texas A&M University*

**4:00 pm – 4:30 pm**

IT3-07

#### **Advances in pptv Measurements of PFAS Volatiles in Thermal Exhausts via FTIR Spectroscopy**

*Curtis Laush, Physical Chemistry Laboratory, Spectrum Environmental Solutions, Mesa, AZ*

**4:30 pm – 5:00 pm**

IT3-09

#### **Fluoropolymer Incineration: Evidence for the Lack of PFAS Emissions**

*Philip Taylor, P Taylor and Associates LLC, Dayton, OH; Hans-Joachim Gehrman, Karlsruhe Institute of Technology; Deepak Kapoor, Gujarat Fluorochemicals GmbH*

### **5:00 pm – 6:00 pm** **Networking Reception** Promenade C

Join our exhibitors, sponsors, presenters, and colleagues for an informal reception to build relationships in the industry.



## Technical Program – Thursday, February 27

**7:00 am – 3:30 pm**  
Conference Registration  
Promenade CD Foyer

**7:00 am – 8:00 am**  
Continental Breakfast  
Promenade CD Foyer

### Session 3: Thermal Treatment Applications

**8:00 am – 8:30 am**

IT3-05

**How to Successfully Use Thermal Desorption for Remediation of Hydrocarbon Contaminated Soils**  
*Haysem Naboulsi, John Tucker, Thermal Desorption*

**8:30 am – 9:00 am**

IT3-06

**Using Thermoelectric Generators to Produce Electricity from a Municipal Solid Waste Bioreactor**  
*Shadi Moqbel, University of Jordan*

**9:00 am – 9:30 am**

IT3-25

**Assessment of Platinum Catalyst in Rice Husk Combustion: A Comparative Life Cycle Analysis**  
*Emmanuel Abah, The Food Systems Research Center & Dept. of Extension, University of Vermont; Ryozi Noguchi, Laboratory of Agricultural Systems Engineering, University of Kyoto, Japan; Tofael Ahamed, Faculty of Life and Environmental Science, University of Tsukuba, Japan*

**9:30 am – 10:00 am**

IT3-19

**Fluegas as a Medium for Gasification of High Ash Coal**  
*Narendra Yadav, Srinivas Seethamraju, Department of Energy Science and Engineering, Indian Institute of Technology Bombay, Maharashtra, India; Sanjay M. Mahajani, Chemical Engineering, Indian Institute of Technology Bombay, Maharashtra, India*

**10:00 am – 10:30 am**

IT3-23

**Equilibrium Based Gasification Model for High Pressure Biomass Gasification**  
*Khursheed Afroz Ansari, Srinivas Seethamraju, Manaswita Bose, Department of Energy Science & Engineering, Indian Institute of Technology Bombay, Powai, Mumbai, India*

**10:30 am – 11:00 am**

**Networking Break and Display Viewing**

Promenade CD Foyer

### Session 4: Pollution Treatment

**11:00 am – 11:30 am**

IT3-17

**SO<sub>3</sub> Removal with Sodium Sorbents**  
*Cornelia Cretiu, American Soda LLC, SOLVAir; S. Song, M. Gaston-Elias, Solvay, SOLVAir*

**11:30 am – 12:00 pm**

IT3-26

**Supervisory Control and Data Acquisition (SCADA) System for Medical Waste Incinerators**  
*Josh Wetmore, Envitech, Inc.*

**12:00 pm – 12:30 pm**

IT3-16

**Treatment Options for Sulfidic, Cresylic, and Napthenic Spent Caustic with Energy Recovery**  
*Aric Fisher, William Whyman, Huixiao Zheng, Honeywell UOP, Tulsa, OK; Janet Ruettiger, Honeywell UOP, Rosemont, IL*

**12:30 pm – 1:30 pm**

**Lunch and Award Presentation**

Promenade C



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## Technical Program – Thursday, February 27, con't.

### Session 5: Emissions Testing & Monitoring (Part 1)

**1:30 pm – 2:00 pm**

IT3-04

**Measurement of Indicator Compounds from Combustion/  
Incineration of PFAS Using FTIR Spectroscopy**

*Thomas Dunder, Jim Barufaldi, Zach Mokrycki, TRC*

**2:00 pm – 2:30 pm**

IT3-22

**The Necessity of Real-Time Monitoring of GHG Emissions**

*Stephane Attal, Ecosystem Informatics Inc., Ontario, Canada*

**2:30 pm – 3:00 pm**

IT3-15

**Advancing Monitoring Systems Using AI**

*Stephane Attal, Ecosystem Informatics Inc., Ontario, Canada*

**3:00 pm – 3:30 pm**

**Networking Break**

Promenade CD Foyer

### Session 5: Emissions Testing & Monitoring (Part 2)

**3:30 pm – 4:00 pm**

IT3-18

**Beyond EPA OTM-45: A Review of Source Emissions  
Methods for the Characterization of PFAS**

*Courtney Adkins, Eurofins TestAmerica Knoxville*

**4:00 pm – 4:30 pm**

IT3-20

**Common Challenges in Speciating VOC Emissions:  
Choosing a Source Test Method, Ensuring Adequate  
Analytical Detection Limits and Employing Best Practices**

*Rohit Surathu, Rich Trzupek, David Ostaszewski, Alliance  
Technical Group, Salt Lake City, UT*

**4:30 pm – 5:00 pm**

IT3-30

**Development of a New Method for Measuring Toxic Metals  
in Industrial Emissions**

*Jonathan Cross, Ohio Lumex, Cleveland, OH*

**5:00 pm**

**Conference Adjourns**

**5:00 pm – 6:00 pm**

**Program Advisory Committee (PAC) Meeting**

## About the Air & Waste Management Association



The Air & Waste Management Association is a not-for-profit, nonpartisan professional organization that enhances knowledge and expertise by providing a neutral forum for technology exchange, professional development, networking opportunities, public education, and outreach to more than 5,000 environmental professionals in 65 countries. A&WMA also promotes global environmental responsibility and increases the effectiveness of organizations to make critical decisions that benefit society. For more information, please visit [www.awma.org](http://www.awma.org).