

PRELIMINARY PROGRAM



36TH INTERNATIONAL CONFERENCE ON THERMAL TREATMENT TECHNOLOGIES & HAZARDOUS WASTE COMBUSTORS

March 6-8, 2018
DoubleTree by Hilton • Houston, TX
www.awma.org/IT3

In Partnership with:



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PRELIMINARY PROGRAM

GENERAL INFORMATION

CONFERENCE OVERVIEW

IT3/HWC, a thermal treatment 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, climate change, renewable energy or alternative energy production, and sustainability. **Thermal treatment technologies include:**

- Incinerators
- Kilns and Furnaces
- Thermal Oxidizers
- Industrial Dryers
- Pyrolysis Reactors
- Fluidized Bed Reactors
- Gasifiers
- Plasma and Vitrification Technologies
- Commercial and Industrial Boilers

These technologies are used in a wide range of facilities and industries:

- Chemical Production
- Cement Production
- Oil Refineries
- Biofuels Production
- Glass Manufacturing
- Primary & Secondary Smelting
- Pulp & Paper
- Mining Operations
- Military Installations
- Agricultural Products
- Universities/Hospitals

REGISTRATION

Register online at www.awma.org/IT3 or download and complete the printable registration form and return it with your payment to:

Registrar, Air & Waste Management Association
420 Fort Duquesne Blvd., 3rd Floor
Pittsburgh, PA 15222-1435 USA
Fax: 412-232-3450

Your registration will not be processed without payment.

REFUND POLICY

If written notice of cancellation is received on or before February 28, 2018 payment will be refunded, less a \$75 cancellation fee. (Cancellation fees apply regardless of payment method). 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.

CONFERENCE PROCEEDINGS

Conference proceedings will be accessible for download by pre-registrants prior to the conference. PowerPoint presentations will also be available post-conference. Attendees will be notified via e-mail when the presentations are available.

IT3/HWC CONFERENCE COMMITTEE

Technical Chair

Michael Mannuzza, *OBG*

Technical Vice Chair

William Norris, *OBG*

Andrew Bartocci, *Envitech, Inc.*

Chih C. Chao, *Cantech Environmental Services*

Michele Gehring, *Coterie Environmental*

LOCATION AND LODGING

DoubleTree by Hilton

Houston Greenway Plaza, 6 Greenway Plaza

Houston, TX 77046 USA

Phone: +1-713-850-2327

Room Rates: \$149 Standard King; \$149 Government through February 12, 2018

Use the link below or contact the hotel directly and mention the Group Name: Air and Waste Management Association: IT3 Conference; and Group Code: AWM.

http://doubletree.hilton.com/en/dt/groups/personalized/H/HOUGWDT-AWM-20180305/index.jhtml?WT.mc_id=POG.

A discounted self-parking rate of \$12 per day is available.

CONTINUING EDUCATION UNITS

Continuing Education Units (CEUs) from the University of Maryland are being offered for participation in the IT3/HWC conference and professional course. The CEU is a nationally recognized measure of participation in an approved non-credit continuing education program. Specific hours will be awarded based on your attendance. Sign up onsite at the conference registration desk. Cost for the CEUs is \$30 for each domestic (U.S.) participant and \$50 for each international participant, regardless of the number of units you receive. A certificate will be mailed to you after the conference. Note that home addresses will be required. Additionally, a record of CEUs awarded will be maintained in the University of Maryland's Office of Extended Studies' database and will be easily accessible for certification and verification purposes.

PRESENTERS' MEETING

Presenters and Session Chairs will meet during breakfast on the day of their session involvement to review program details. Presenters should bring their presentations on a memory stick/USB to this meeting, as well as a brief biography.

SPECIAL ACCOMMODATIONS

The Air & Waste Management Association supports the Americans with Disabilities Act (ADA). Those attendees requiring specific equipment or services should contact Cindy Fontanesi at cfontanesi@awma.org to make those needs known in advance. A&WMA will make every reasonable effort to accommodate them.

PRELIMINARY PROGRAM

CONFERENCE EVENTS

TECHNICAL COURSE — TUESDAY, MARCH 6 1:00 pm - 4:00 pm Ticket required.

This course will provide an overview of regulatory aspects associated with the storage, handling and combustion of industrial and hazardous waste. The course will be comprised of three consecutive sessions, each covering separate but related topics. Registration will include a copy of the course manual.

Session 1 - How to Navigate Industrial & Hazardous Waste Investigations

Each year, the Texas Commission on Environmental Quality (TCEQ) is required to conduct investigations of industrial and hazardous waste operations throughout the state of Texas. During these investigations, the inspector will review site conditions, waste management practices, and documentation to evaluate compliance with applicable rules. Gain insight into the many elements of these investigations including what investigators are looking for, new rules can affect the results of the investigation, and common pitfalls.

Presented by the Texas Commission on Environmental Quality

Session 2 – Hazardous Waste Generator Improvement Rule

The final revisions to the regulations for generators of hazardous waste under the Resource Conservation and Recovery Act (RCRA) became effective on the Federal level in 2017. This session will highlight the regulatory changes, and how they will affect regulated generators of hazardous waste.

Course instruction will be provided by CS2, Inc.

Session 3 – All MACTS are Not Created Equal

This session will look at the various MACT rules that have requirements for combustion, combustion control systems, and related offgas cleaning systems and identify the MACT rules with thermal treatment aspects. Compliance testing overview for the various MACT requirements will be discussed as well as some of the differences in the calculation of Dioxin / Furan Toxic Equivalency and the applicable Toxic Equivalent Factors and handling non-detects in the TEQ calculation.

Course instruction will be provided by Focus Environmental, Inc.

EXHIBIT HALL SOCIAL — WEDNESDAY, MARCH 7

5:00 pm - 6:30 pm

Join exhibitors and conference attendees for networking, drinks and appetizers!

Open to all full conference attendees.

TECHNICAL TOUR - FRIDAY, MARCH 9

University of Texas Medical Branch (UTMB) Medical Waste Incinerator

7:00 am - 12:00 pm

6:45 am Meet near the entrance of the hotel

7:00 am Bus departs from the hotel

12:00 pm Bus returns to the hotel

Visit a waste incineration operation that is in compliance with some of the most stringent emission limits in industry today. The system is permitted to the National Emission Standards for Hazardous Air Pollutants (NESHAP) for hospital, medical, and infectious waste incinerators (HMIWI) as a large, new incinerator. The exhaust gas is controlled for particulates (PM), acid gases (HCl/SO₂), and heavy metals: lead (Pb), cadmium (Cd), mercury (Hg), and dioxins/furans (D/F). UTMB has recently passed a third stack test in three consecutive years and will now transition to one stack test every three years. In 2014 the Texas Commission on Environmental Quality (TCEQ) asked UTMB to destroy medical waste related to the care of Ebola patients who had been treated in Dallas. The waste was safely transported to and incinerated at UTMB. The system is comprised of a 750 lb/hr Consutech controlled air incinerator followed by an Envitech multi-pollutant incinerator gas cleaning system. A water treatment system treats the scrubber effluent before discharging from the facility.

Ticket required; Cost: \$59

Tour may be cancelled if minimum number of participants not met.

THANK YOU TO OUR SPONSORS



ABOUT THE AIR & WASTE MANAGEMENT ASSOCIATION

A&WMA 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. A&WMA Federal Tax ID # 25-6048614.

PRELIMINARY PROGRAM

TECHNICAL AGENDA – Wednesday, March 7, 2018

7:30 am – 4:30 pm

Conference Registration

7:30 am – 8:30 am

Continental Breakfast and Presenters' Meeting

KEYNOTE PLENARY SESSION

8:30 am – 8:45 am

Welcome

Michael Manuzza, OBG

8:45 am – 9:15 am

Environmental Response Efforts and Waste Management

Kelly Cook, Director Critical Infrastructure Division, TCEQ, TCEQ's "Hurricane Czar"

9:15 am – 9:45 am

Streamlining the Hazardous Waste Combustor Program

Bob Patton, Jr., Manager, Industrial Waste Permits Section, TCEQ

9:45 am – 10:15 am

Tools to Standardize Efficient Review of CPT Plans

Will Wyman, Program Supervisor, Waste Permits Division, TCEQ

10:15 am – 10:30 am

Session Q&A

10:30 am – 11:00 am

Networking break and exhibition viewing

SESSION 1

Chair: Pierre Carabin, Pyrogenesis

11:00 am – 11:30 am

IT3-01

15 Years of Research and Development on Electrofiltration for Gas Cleaning

Florent Lemont, Mickael Marchand, Aldo Russell, CEA, DEN, DE2D, SEVT, LPTI, F-30207 Bagnols sur Cèze, France; Thierry Reess, Antoine Silvestre de Ferron, Sonia Souakri, Laboratoire de Génie Electrique, France

11:30 am – 12:00 pm

IT3-17

Medical Waste Incinerator Scrubber for Meeting Ultra Low Emission Limits

Andy Bartocci, Envitech, Inc., San Diego, CA

12:00 pm – 12:30 pm

IT3-21

Back to the Basics – Baghouse Monitoring and Control

Robert W. Baxter, B3 Systems, Inc., Raleigh, NC

12:30 pm - 1:30 pm

Lunch

SESSION 2

Chair: William Norris, OBG

1:30 pm – 2:00 pm

IT3-23

Kinetics of Co-Gasification of Biomass and Plastic Wastes in CO₂
K. Burra, A. K. Gupta, The Combustion Laboratory, Department of Mechanical Engineering, University of Maryland, College Park, MD

2:00 pm – 2:30 pm

IT3-20

Destruction and Transformation of Pyrene by Mineral Surfaces during Thermal Desorption

Cameron P. Oden, University of Texas at Austin, Austin, TX; Charles J. Werth, University of Texas at Austin, Austin, TX; and Lynn E. Katz, University of Texas at Austin, Austin, TX

2:30 pm – 3:00 pm

IT3-19

Estimating Source Strengths of HCl and SO₂ Emission in the flue gas from Municipal Solid Waste Incineration

Hua Zhang, Siyuan Yu, Liming Shao, Institute of Waste Treatment and Reclamation, Tongji University, Shanghai, China; Pinjing He, Centre for the Technology Research and Training on Household Waste in Small Towns & Rural Area, Ministry of Housing Urban-Rural Development, Shanghai, China

3:00 pm – 3:30 pm

Networking break and exhibition viewing

SESSION 3

Chair: Thomas Busmann, Focus Environmental, Inc.

3:30 pm – 4:00 pm

IT3-24

Upstream Process Optimization to Reduce the Cost of Air Pollution Control

Fred Hencken, OBG, East Norriton, PA

4:00 pm – 4:30 pm

IT3-14

Permitting a Thermal Desorption System using a Hazardous Waste Combustion Approach

Rich Devin, Diversified Scientific Services, Inc., Kingston, TN; Michael Krall, Montrose Air Quality Services, LLC, Austin, TX

4:30 pm - 5:00 pm

IT3-25

The Advantages of Flameless Thermal Oxidation

Nicholas DeSanti, PCC, Pittsburgh, PA

5:00 pm - 6:30 pm

Exhibit Hall Social

PRELIMINARY PROGRAM

TECHNICAL AGENDA - Thursday, March 8, 2018

7:30 am – 4:30 pm

Conference Registration

7:30 am – 8:30 am

Continental Breakfast and Presenters' Meeting

KEYNOTE PLENARY SESSION

8:30 am – 9:00 am

Homeland Security Planning Scenarios and Waste Management through Thermal Treatment

Paul Lemieux, Associate Division Director, NHSRC/DCMD, U.S. EPA

9:00 am – 9:30 am

Industry and Government Collaboration during the Ebola Crisis: A Practical Perspective

Selin Hoboy, Vice President, Legislative & Regulatory Affairs, Stericycle, Inc.

9:30 am – 10:00 am

An Overview of UTMB's Captive Medical Waste Incinerator and Its Role in Public Health Crisis

Marcel Blanchard, Associate Vice President - Utility & Fleet Operations, University of Texas Medical Branch

10:00 am – 10:30 am

Networking break and exhibition viewing

SESSION 4

Chair: Prakash Acharya, CB&I Federal Services, Kings Bay Support Services, LLC

10:30 am – 11:00 am

IT3-15

Assessing PCP Removal Mechanisms in Thermal Conduction Heating

Justin Davis, The University of Texas at Austin; Howard Liljestrand, The University of Texas at Austin; Lynn E. Katz, The University of Texas at Austin

11:00 am – 11:30 am

IT3-06

Introduction of Regenerative Thermal Oxidizers Applied on Volatile Organic Compounds Emission Control in Shanghai during Recent Years

Kaiqi Li, Shiwon Ding, Jianping Wu, Gangfeng Zhang, Xiaochu He, Shanghai Academy of Environmental Sciences, Shanghai, China

11:30 am – 12:00 pm

IT3-08

Gasification and Catalytic Reforming of Biomass Waste – Syngas Formation and Tar Removal

Katsuya Kawamoto, Graduate School of Environmental and Life Science, Okayama University, Japan

12:00 pm – 1:30 pm

Lunch and Award Presentation

SESSION 5

Chair: Helen Lou, Lamar University

1:30 pm – 2:00 pm

IT3-22

An Innovative Volatile Organic Compound Incinerator

Joel K.T. Crawmer, Chien-Hua Chen, Bradley M. Richard, and Howard G. Pearlman, Advanced Cooling Technologies, Inc., Lancaster, PA; Thomas V. Edwards, Temple University, Philadelphia, PA; Paul D. Ronney, University of Southern California, Los Angeles, CA

2:00 pm – 2:30 pm

IT3-10

Simulation and Analysis of VOCs Recovery System for Crude Oil Storage Tanks

Huilong Gai, Helen.H.Lou, Dan F. Smith Department of Chemical Engineering, Lamar University, Beaumont, TX

2:30 pm – 3:00 pm

IT3-26

A Numerical Simulation on Pollutant Dispersion from a Ground Flare in Shanghai

Xiaobo Shen, Guangli Xiu, East China University of Science and Technology, Shanghai, China

3:00 pm - 3:30 pm

Networking break and exhibition viewing

SESSION 6

Chair: Florent Lemont, French Alternative Energies and Atomic Energy Commission (CEA)

3:30 pm – 4:00 pm

IT3-11

Optimization of Flare Operation

Helen H. Lou, Daniel Chen, Anan Wang, Vijaya Damodara, Dan F. Smith Department of Chemical Engineering, Lamar University, Beaumont, TX; Xianchang Li, Department of Mechanical Engineering, Lamar University, Beaumont, TX; Christopher Martin, Department of Chemistry, Lamar University, Beaumont, TX

4:00 pm – 4:30 pm

IT3-04

Comparison of RTO and Carbon Adsorption for Styrene Control from Composite Manufacturing

Thomas G. Busmann, Tony Babb, Focus Environmental Inc., Knoxville, TN

4:30 pm – 5:00 pm

IT3-18

Sulfur Recovery Unit (SRU) SO₂ Scrubber for Startup, Shutdown, and Malfunctions (SSM)

Andy Bartocci, Envitech, Inc., San Diego, CA

5:00 pm – 6:00 pm

Program Advisory Committee (PAC) Meeting

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EXHIBITION INFORMATION

Exhibition hours:

Tuesday, March 6 - Setup 1:00 pm – 4:30 pm
Wednesday, March 7 9:00 am – 6:30 pm
Thursday, March 8 9:00 am – 3:30 pm

CURRENT EXHIBITORS (As of 1/29/18)

Alliance Source Testing

Alliance Source Testing (www.stacktest.com) is focused solely on providing accurate and consistent stack testing solutions to industrial customers throughout the United States. We specialize in providing comprehensive and confirmatory performance testing for hazardous waste combustion sources. We currently have 40 mobile laboratories and 70 test stack testing professionals located in eight regional offices, including Houston.

B3 Systems

B3 Systems provides specialized environmental field services and products including: Chemical Spiking, PM Spiking, Bag Filter Optimization, Bag Leak Detectors, Dust Monitors for EPA MACT Compliance and Process Control.

Babcock & Wilcox/MEGTEC

B&W MEGTEC is a single-source supplier of turnkey clean-air solutions engineered to meet stringent emissions regulations. We offer wet particulate and semi-dry scrubbers, acid gas absorbers, regenerative thermal oxidizers for VOC control, as well as electrostatic precipitators, pulse jet fabric filters (baghouses), and Multiclone® dust collectors for particulate control. Reliable systems operation, environmental compliance, reduced capital and operating costs, and the convenience of partnering with an industry leading supplier are key benefits of working with B&W MEGTEC.

Catalyst Air Management, Inc.

Catalyst Air Management, Inc., was formed in 1996 to provide quality process evaluation and emissions testing services. Catalyst provides experienced, qualified test personnel proficient in the latest EPA test methods. Each team is structured with a QSTI-certified test supervisor who is responsible for ensuring that test programs are completed as scheduled, and who follow established QA procedures in conformance with ASTM D-7036, while adhering to all applicable environmental, health, and safety regulations.

Envitech, Inc.

Envitech is a leading supplier of air pollution control systems. We specialize in removal of particulate and gaseous emissions from industrial processes, including aerosols, heavy metals, dioxin/furans, acid gases, tars, and volatile organic compounds (VOCs). Our systems include wet electrostatic precipitators, high efficiency Venturi scrubbers, and packed bed absorbers and condensers.

Harbison Walker International

With more than 150 years of industry leadership, HarbisonWalker International (HWI) is the largest supplier of refractory products and services in the United States, serving virtually every major industry that requires refractory solutions to enhance production and protect assets. Headquartered in Pittsburgh, PA, the company's international network spans North America, Europe, and Asia, with 19 manufacturing plants, and 30 global sourcing centers.

Metco Environmental

METCO Environmental is the largest company in the U.S. specializing in Source Emission Testing. METCO provides emission testing services and CEM services and certifications for all types of point sources and industries. METCO specializes in Combustion Performance Tests, and other projects for incinerators, boilers, industrial furnaces and medical waste incinerators. METCO provides CPT Plans, and can assist in planning projects for engineering studies or compliance.

Monroe Environmental

Monroe Environmental is a premier provider of high quality air pollution control (APC) systems, services, and solutions for thermal treatment processes covering a broad range of industries and applications. Since 1970, Monroe has provided thousands of air pollution control systems for industrial and municipal facilities throughout the world. Monroe specializes in designing and manufacturing APC systems for combustion and high-temperature processes such as boilers, furnaces, incinerators, thermal oxidizers, gasifiers, dryers, and many others. Monroe's full range of support services include technical evaluations, engineering, permitting support, installation, commissioning, testing, parts, and on-site support services for existing, new, and retrofitted systems.

Montrose Environmental Group

Montrose Environmental Group is a national environmental company offering Air Quality, Environmental Laboratory and Regulatory Compliance services to a diverse range of clients in industry and government. Our team of experienced engineers, scientists, chemists, and technicians provide reliable and timely environmental data using the highest technical and ethical standards

OBG

Advanced Manufacturing. Energy. Environment. Water. For more than 70 years, OBG has specialized in engineering and problem solving, but the Company's real strength is creating comprehensive, integrated solutions for its clients. OBG assembles custom project teams, comprised of subject matter experts and specialists, tailored to drive value and efficiency to every client's unique project. OBG is an industry leader in combustion, incineration, air pollution control, energy recovery, utilities and infrastructure, air and water quality, process engineering and controls system integration. OBG – There's a way. www.obg.com

Process Combustion Corporation

For 45+ years, PCC has designed, supplied & serviced combustion, heat transfer & pollution control systems worldwide. With offices in Pittsburgh, USA; China and England, PCC is a global leader in pollution control. Our custom thermal/ biological oxidation designs minimize system costs, especially energy consumption, while meeting environmental regulations.

Trace Environmental Systems, Inc.

Trace provides complete CEM systems and DAS reporting software. We work at over 45 Waste-Energy plants and hundreds of other applications throughout the U.S. Trace provides new systems and upgrades to existing and we have a team of support personnel providing field and remote support for CEMS and software.