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Q3 2021 SES WEBINAR  
EVOLUTIONS IN MEASUREMENT TECHNOLOGY**

**WHO: Chair/Moderator**

- Barbara Marshik, Gas Marketing Consulting, LLC

**Speakers/Panelists**

- Barbara Marshik, Gas Marketing Consulting, LLC
- Richard Himes, EPRI
- Kelly Ng-Feng, Ohio Lumex Company
- Aaron Johnson, NIST

**WHAT:** Webinar titled “Evolutions in Measurement Technology”

**WHEN:** Wednesday **September 22, 2021** from 11 am EDT to 2 pm EDT

**WHERE:** Virtual presentation using Zoom Webinar

**WHY:** To discuss a potpourri of topics related to evolving measurement techniques, test methods, and method acceptance criteria. The topics include the following list which are described in more detail on the following page titled “Abstracts”

- Safety Short
- NH<sub>3</sub> Measurement Technique Comparisons
- Optical Based Monitors
- SO<sub>3</sub> Sorbent Traps: Recent Developments
- Non-Nulling 3D Velocity Testing

**HOW:** The webinar is scheduled for 3 hours and will include a safety short followed by four 30-minute presentations and moderated Q&A session. The virtual format will allow for audience participation using the Q&A feature of Zoom Webinars.

Register in advance for this webinar:

[Link to Webinar Registration](#)

After registering, you will receive a confirmation email with a link to join the webinar and save the event to your calendar.

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For more information, contact the SES Webinar Facilitator:

Angela Hansen by email at [angelaahansen@gmail.com](mailto:angelaahansen@gmail.com) or phone at 208.891.4550

This webinar will be recorded. If you are unable to attend on September 22<sup>nd</sup>, go ahead and register and we will send you a link to the recording after the event.

## **Abstracts**

### **NH<sub>3</sub> Measurement Technique Comparisons**

*Barbara Marshik, Gas Marketing Consulting, LLC*

This presentation will focus on the various direct and indirect techniques used in the measurement of ammonia (NH<sub>3</sub>) for stack emission compliance and their potential pitfalls. The focus will be on the use of tunable diode laser (TDL) cross-stack NH<sub>3</sub> analyzers as they continue to push into the CEM market following the guidance of the HCl TDL-based Performance Specification 18 (PS18) field specifications.

### **Application of Optical Based Monitors for Gas Turbine CEM Measurements**

*Richard Himes, Electric Power Research Institute (EPRI)*

In-situ, line-of-sight average measurements, using optical based monitors provide several potential advantages over traditional single-point extractive CEM approaches. Monitor accuracy and the ability to zero and calibrate monitors measuring O<sub>2</sub>, CO<sub>2</sub>, CO, NO, NO<sub>2</sub>, NH<sub>3</sub> and H<sub>2</sub>O on a GTCC stack have recently been assessed. The current presentation will provide an overview of the technologies applied, issues encountered, and initial results from a third-party objective evaluation.

### **SO<sub>3</sub> Sorbent Traps: Recent Developments**

*Kelly Ng-Feng, Ohio Lumex Company*

Ohio Lumex has developed sorbent traps and associated sampling methods for SO<sub>3</sub>. The method is significantly easier to perform in the field than existing methods and are backed by EPA M30B performance criteria which are used to monitor the quality of the results. The method has been well-refined over the past few years and has been used in both laboratory (using an Entrained Flow Reactor) and field studies evaluating direct sorbent injection (DSI) products. Field comparison data with associated sampling details will be discussed in this presentation.

### **Non-Nulling 3D Velocity Testing for Improving the Uncertainty of CEMS Flow Measurements**

*Aaron Johnson, National Institute for Standards and Technology (NIST)*

Recently, NIST has been working on an improved technique of performing 3D RATA testing using a non-nulling approach which will significantly reduce the complexity, duration, and potential for human error. This presentation will provide an overview of the latest test results and the advances in the non-nulling test methodology and field studies. The planned test efforts for 2021 and future calibration and test method development will also be discussed.