FAMU-FSU Engineering

FAMU - FSU COLLEGE OF ENGINEERING
DEPARTMENT OF CIVIL & ENVIRONMENTAL ENGINEERING

Technical Awareness Group (TAG) Meeting No. 1

Thursday, December 16, 2021 2:00 – 2:50 pm Eastern Time
Meeting location: Zoom

Project Title: Per- and Polyfluoroalkyl Substances (PFAS) in Landfill Gas Emissions

TAG Members: Bruce Marvin (Geosyntec Consultants), Chao Zhou (Geosyntec Consultants), Claudia Mack (Geosyntec Consultants), Kevin Warner (Geosyntec Consultants), Stephanie Sanchez (Geosyntec Consultants), Terry Johnson (Waste Management Inc.), Sterling Carroll (Florida Rural Water Association), Joseph Dertien (Florida Department of Environmental Protection), Kerry Tate (Florida Department of Environmental Protection), Lauren J. Coleman (Florida Department of Environmental Protection), Owete S. Owete (Florida Department of Environmental Protection), Shanin Speas-Frost (Florida Department of Environmental Protection), Walsta Jean-Baptiste (Florida Department of Environmental Protection)

Principle Investigator: Youneng Tang

In Attendance: Bruce Marvin, Chao Zhou, Claudia Mack, Joseph Dertien, John Schert, Karam Eeso, Kevin Warner, Mojtaba Nouri Goukeh, Owete S. Owete, Walsta Jean-Baptiste, Youneng Tang

Project Introduction

The meeting was called to order by Dr. Tang at 2:00 PM. Dr. Tang began by introducing volatile PFAS and explained how volatile PFAS can exist in indoor air and landfills. Then, Dr. Tang reviewed some previous studies and discussed their methods for measuring PFAS. He noted that the concentration of volatile PFAS is very low, and explained how this project addresses this issue.

Project Objectives and Tasks

Dr. Tang presented three objectives, including: 1) preconcentration of gas-phase PFAS by different methods and comparing these methods, 2) measurement of PFAS in landfill gases to find out which type of landfills produces the most volatile PFAS, 3) measurement of PFAS in lab-scale bottles to find out which type of waste produces the most volatile PFAS.

Project Team

The research team mainly consists of Dr. Youneng Tang (PI), Mojtaba Nouri Goukeh (graduate student), and Karam Eeso (undergraduate student).

Preliminary Results

- Objective 1: Using a commercial preconcentartor, the detection limit for octafluorocyclobutane was improved by ~1000 times.
- Objective 3: A specific plan for setting up 18 lab-scale bottles were made.

Group Discussion

Major comments and suggestions from the TAG:

- Suggestion: Adding bacteria to lab-scale columns was proposed for increasing the generation of volatile PFAS.
- Comments: Some challenges about the operation of lab-scale bottles and sampling were discussed, such as the influence of heating on gas expansion, possible no equilibrium between the sampling bags and the headspace in the bottle.
- The research team planned to set up one bottle first to identify potential problems and pitfalls before setting up all 18 bottles.

The meeting was adjourned at 2:50 PM, minutes taken and submitted by Mojtaba Nouri Goukeh.