



Center Midwest - Coatings and Diamond Technologies Division

International Internship – Water and Wastewater Treatment

Overview

Fraunhofer USA, Inc. located on the campus of Michigan State University in East Lansing, Michigan, is seeking a highly motivated, reliable and technically competent individual to join our Water Treatment team as an intern to work on detection and removal of emerging contaminants in water sources. Our team will work on several water treatment technologies to address contaminants in water including disinfection byproducts (DBPs), per- and polyfluoroalkyl substances (PFAS) and pesticides. Such treatment technologies include electrochemical oxidation (EO), adsorption by granular activated carbon (GAC) and photocatalysis. The team will also examine the formation and release of these contaminants from different water sources. As a team member, you will help design and conduct experiments, analyze samples using gas, liquid and ion chromatography (GC-MS/MS, LC-MS/MS, IC) and others, generate and present data in a meaningful report. You will be encouraged to present results at national and international conferences as well as prepare manuscripts for publication in peer reviewed journals. The intern will conduct research under the supervision of Dr. Ibrahim Abusallout.

Current areas of research include:

- Enhancement of GAC using a beam of electrons/ions to rapidly absorb unwanted contaminants
- Combination of EO and ultrasound for rapid defluorination of PFAS and pesticides
- Detection of volatile PFAS
- Formation of DBPs in activated sludge at wastewater treatment plants

Responsibilities

- Conduct experiments to evaluate the formation and removal of contaminants from water
- Analysis of samples using chromatography approaches, total organic carbon analyzer, BOD/COD, spectrometer and others
- Data collection and reporting
- Maintaining a detailed and accurate laboratory notebook

Requirements

- Bachelor's or master's degree (or currently pursuing either) in chemistry, environmental science, environmental engineering, environmental chemistry, chemical engineering or any related fields
- Experience in chemical, environmental, or similar laboratories
- Experience in data processing and statistical analysis using Excel or any related software
- Interest in water treatment
- Willingness to consider a 9 month to 1 year internship

Contact

Please send cover letter and resume to Dr. Ibrahim Abusallout iabusallout@fraunhofer.org (Technical Lead) and Mr. Michael Becker mbecker@fraunhofer.org (Administration Director).