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Dec 10th, 4:00 PM - 5:00 PM

### Rapid Characterization of Dissolved Organic Matter and Precursors to Disinfection By-Products by Fluorescence Technique

Taha Marhaba

*New Jersey Institute of Technology*

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**MONTCLAIR STATE**  
UNIVERSITY

The Doctoral Program in Environmental Science & Management  
and MSU Sustainability Seminar Series Present:

## Rapid Characterization of Dissolved Organic Matter and Precursors to Disinfection By- Products by Fluorescence Technique

WHEN: December 10, 4:00 pm WHERE: CELS 120 lecture hall

**Taha Marhaba**  
NJIT



Dr. Marhaba is Professor and Chairman of the John A. Reif, Jr. Department of Civil & Environmental Engineering at New Jersey Institute of Technology (NJIT). Dr. Marhaba earned a Bachelors, Masters and Doctorate in Civil and Environmental Engineering from Rutgers University, whose alumni engineering society recently awarded him the “Distinguished Engineer Award”. He conducts fundamental and applied research in various areas of civil and environmental engineering, specifically water quality, drinking water treatment, and environmental systems and management. His work is published in numerous peer-reviewed publications. He has received numerous research and teaching awards, the latest being the Master Teacher Award from NJIT, the highest designation for teaching excellence. Dr. Marhaba joined NJIT in 1995 following several years of experience in consulting with Stone & Webster Engineering Corp.. He led the CEE Department at NJIT as Chairman since 2009.

Natural organic matter (NOM) in the environment today does not only come from humic sources, but also from non-humic or synthetic sources. The typical total organic carbon (TOC) analysis has been typically used as an aggregate measure of NOM in water. NOM from surface water sources were isolated and fractionated by resin adsorption techniques into hydrophobic acid, hydrophobic neutral, hydrophobic base, hydrophilic acid, hydrophilic neutral and hydrophilic base. The Spectral Fluorescent Signatures (SFS) technique through a database of spectral characteristics specific to each fraction was developed for the identification of the six NOM fractions. Among the main advantages of the technique are high sensitivity and rapid identification. The potential use of the SFS technique for the rapid spatial and temporal qualitative and quantitative identification of the NOM fractions, including the problematic ones, such as precursors to trihalomethanes (THMs) formation following chlorination of water will be presented.

For more information contact Dr. Deng at [dengy@mail.montclair.edu](mailto:dengy@mail.montclair.edu)