

**Environmental Engineering**

**and Earth Sciences**

**EEES Department Seminar**

**Predicting Aqueous-Phase Fate of Organic Compounds**

**Induced by Reactive Free Radicals**

PRESENTED BY

**Dr. Daisuke Minakata**

 **Associate Professor**

Department of Civil, Environmental, and Geospatial Engineering

Michigan Technological University, USA

**Abstract:**

The identification of trace organic contaminants in natural waterways and during water and wastewater treatment processes has raised public concerns about the uncertain adverse effects to human health and ecosystems. Advanced oxidation and reduction processes that produce highly reactive radicals such as hydroxyl radicals and solvated electrons at room temperature and atmospheric pressure are attractive and promising methods that can destroy a wide variety of reduced and oxidized forms of organic contaminants. Reactive radical species rapidly reacts with water constituents and target contaminants to initiate a series of radical-involved chain reactions that lead to various intermediates and transformation byproducts. Although a number of experiments and kinetic models have revealed the major reaction pathways for some contaminants, the fate of the transformation byproducts has not yet been elucidated.

In this talk, I will present the fundamentals science of advanced oxidation processes and process rational with applications. I will also cover research projects on advanced oxidation and reduction processes I have conducted in the last 20 years.

**Biography:**

Dr. Minakata is an associate professor in Environmental Engineering at Michigan Tech. Before Dr. Minakata joined MTU in 2013, he worked as a research engineer at the Brook Byer Institute of Sustainable Systems at Georgia Tech for 3.5 years. Dr. Minakata earned Ph.D. degree in Environmental Engineering at Georgia Institute of Technology in 2010 and M.S. and B.S. from Kyoto University in Japan.

Dr. Minakata is an early career editorial board member for Environmental Science and Technology and an associate editor for Water Research X. Dr. Minakata has been awarded excellence in reviewer awards for ES&T, ES&T Letters, and ACS ES&T Water. Dr. Minakata received numerous awards including professional excellence award from Michigan AWWA in 2023 and Oak Ridge Associated Universities Ralph E. Power Junior Faculty Enhancement Award in 2015.

**Contact:**

dminakat@mtu.edu

**2:30 PM**

**Rich Lab Auditorium**

**Friday, October 18, 2024**

***“Attendance is mandatory for graduate students enrolled in EES 8610, EES 9610, and GEOL 8610”***



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