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Series

Tuesday – September 24, 2024
12:00 PM to 1:00 PM

Bioinspired Phosphorus Recovery: Conversion & Adsorption to Close the P Loop

This presentation will highlight the global issues surrounding the phosphorus (P) paradox whereby it is a limiting nutrient required for food production and yet an overabundance of P discharged to environmental waters can have detrimental consequences. After putting into perspective global and local issues around P management, this presentation will then highlight key research developments made by the Mayer research group on phosphorus removal and recovery from wastewater employing protein-based adsorbents. This technology advances the possibility of selectively removing and recovering P from complex water matrices.

Agenda

12:00 PM - Introduction

12:05 PM – Bioinspired Phosphorus Recovery

Brooke Mayer PhD, PE | Marquette University

12:45 PM - Q&A with presenter

1:00 PM - Adjourn

CONTINUING EDUCATION

1.0 CEUs for Operators in Illinois, Wisconsin & Minnesota.
Operator ID/Quiz required for webinar.



1.2 PDHs for all Professional Engineers

COST

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PRESENTED BY:



Brooke Mayer, PhD, PE
Professor Civil, Construction & Environmental Engineering
Marquette University

Brooke Mayer is a Professor and Director of Graduate Studies in the Department of Civil, Construction and Environmental Engineering at Marquette University. She also serves as co-Lafferty Professor, through which she coordinates engineering education initiatives in the Opus College of Engineering. Dr. Mayer's teaching and research interests focus on physical-chemical treatment processes for water and wastewater applications, including the mitigation of nutrients, viruses and other pathogens, and chemical contaminants such as disinfection byproducts. Her research emphasizes improved public health and safety as well as advancing the waste-to-resource paradigm. For her work in these areas, Dr. Mayer was recognized with an NSF CAREER award, Marquette University's Opus College of Engineering Outstanding Researcher Award, and the 2021 Research Award from the Wisconsin Chapter of the American Water Works Association.

Current research includes studies of phosphorus removal and recovery using physical-chemical processes such as protein-based adsorption and electrochemical transformations. Other examples of ongoing research include evaluations of electrochemical- and UV-based mitigation of viruses in drinking water or on surfaces. Dr. Mayer's past collaborations with STEPS researchers Rittmann and Westerhoff, including as part of the NSF-sponsored Sustainable Phosphorus Research Coordination Network led by Elser, produced multiple peer-reviewed articles focused on phosphorus removal and recovery.

Mayer graduated from Arizona State University with her B.S. in 2004, M.S. in 2006, and Ph.D. in 2008, all with an emphasis in Environmental Engineering. She is a licensed Professional Engineer (Environmental) in the state of Arizona. Dr. Mayer joined the faculty at Marquette University in 2012. She has published over 50 papers and currently serves as an Associate Editor for *Water Environment Research*.