

# Fate of Emerging Contaminants and Dissolved Organic Matter in Novel Oxidative Systems



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**2:30 p.m.**



**Conference Room, 3/F,  
Mong Man Wai Building**



**[Zoom Link](#) (Mixed-mode)**

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Chlorine is the most widely used water disinfectant in the past 100 years, however, it suffers from the generation of carcinogenic disinfection byproducts (DBPs). In response, alternative oxidants like ozone, UV irradiation, and peracetic acid have been increasingly utilized in water treatment, owing to their advantages of high disinfection capacity, limited toxic byproduct formation, and easy retrofit. Moreover, these oxidants and their associated advanced oxidation processes (AOPs) are under investigation for the abatement of emerging contaminants. The growing focus on oxidizing contaminants in these systems, coupled with the effects of ubiquitous dissolved organic matter (DOM), necessitates a better understanding of their interactions and mechanisms. This presentation will showcase our latest research, including studies on the reactivity of emerging contaminants, the molecular transformation of DOM, and the diverse roles of DOM in oxidative systems. The underlying reaction mechanisms are elucidated by complementary experimental, computational, and kinetic modeling approaches. Our research provides new knowledge and tools useful for the further development and optimization of novel oxidation processes for water treatment applications.



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