CHEMISTRY DEPARTMENT SEMINAR

Addressing Emerging Contaminants in Wastewater: The Role of Biofilm-based Strategies in Anaerobic Treatment Systems

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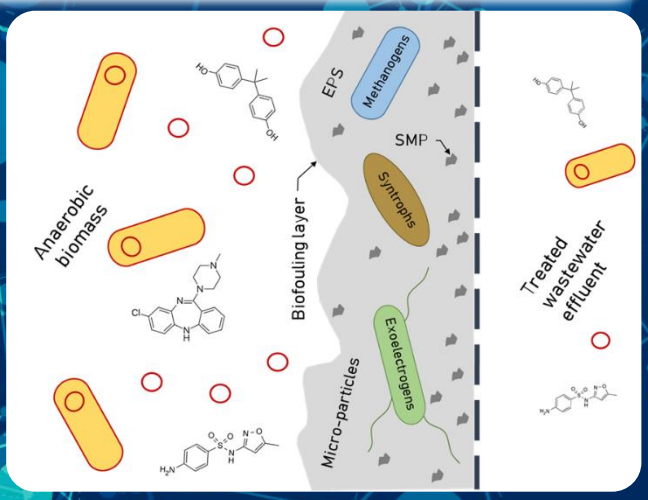
There is a significant need to develop new wastewater treatment technologies that can sustainably promote water reuse. Many emerging technologies that are suitable for reuse are centered on anaerobic digestion as a core treatment process in order to also harness the potential for energy recovery from waste streams. The necessity to directly address contaminants of emerging concern (such as antibiotics and antibiotic resistance elements) in wastewater effluents, however, must not be overlooked in the pursuit of sustainability. Although anaerobic biotechnologies have shown promise for improving the removal of various emerging contaminants, the basis of their removal is not well understood (i.e., what role does the anerobic bioprocess play and what does "removal" mean exactly?).

Some of the most successful emerging mainstream anaerobic processes have incorporated membrane separation into their design (e.g., the anaerobic membrane bioreactor). It is well known that biofilm formation on the separation membranes (biofouling) in such systems is inevitable. It has also been recognized that biofilm-based anaerobic growth can serve to aid in the degradation of organic compounds such as antibiotics. Despite this, the potential promise of utilizing targeted membrane biofilm development for reducing the risks of emerging contaminants still has a long road to becoming an implementable reality. This seminar will provide an overview of recent and planned research on the topic of increasing the utility of membrane biofilm growth for the alleviation of pharmaceutical and antibiotic resistance-associated threats in sustainable anaerobic-based treatment systems.



September 30th @12 pm – Lopez 106

Meeting ID: 951 3765 0274

https://zoom.us/j/95137650274