



INDIAN INSTITUTE OF TECHNOLOGY DELHI
DEPARTMENT OF BIOCHEMICAL ENGINEERING &
BIOTECHNOLOGY

2018-19 Seminar Series

Friday, 8th March, 2019



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Engineering
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Title: Contaminants of emerging concern in the environment and degradation by photochemical processes

Contaminants of emerging concern (CECs), such as pharmaceuticals and personal care products, are present in the aquatic environment and represent potential threats to both human and ecological health. Background information on CECs will be framed using our measurements in the Chesapeake Bay, which is the largest estuary in the United States. The first part of the talk will focus on the occurrence of CECs in an urban watershed that is not impacted by expected sources, such as wastewater treatment plants or animal feeding operations. We hypothesize that CECs are introduced to this watershed through leaking sewers. Given the detection of CECs in the aquatic environment, a need exists to improve CEC removal during wastewater treatment. The second part this talk will focus on the transformation of antibiotics during photochemical processes. Most antibiotics derive from a baseline pharmacophore substituted with different functional groups. We hypothesized that direct photolysis of antibiotics results in changes at the functional groups, and not the pharmacophore, effectively resulting in antibiotic-to-antibiotic transformation. These findings highlight the need for continued investigation both upstream and downstream of wastewater treatment plants to fully understand the occurrence, fate, transport, and toxicity of CECs in the aquatic environment.

All are welcome

Seminar will be held in DBEB Seminar room at [Block I, Room 223](#) at **11 am**

For additional information, contact Seminar coordinator Dr. Preeti Srivastava at preeti@dbeb.iitd.ac.in or Dr. D. Sundar at sundar@dbeb.iitd.ac.in