PURDUE ENGINEERING

LYLES SCHOOL OF CIVIL ENGINEERING

# Edward M. Curtis Professor Seminar

## Mini fluidic photoreaction system: An advanced bench-scale photoreactor

**March 28, 2017**
**Reception at 3:30 | HAMP G212**
**Seminar at 4:00 | HAMP G212**

**Dr. Mengkai Li**
**2016-2017 Edward M. Curtis Professor**
**Associate Professor**
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Dr. Mengkai Li is visiting from the Research Center for Eco-Environmental Sciences, Chinese Academy of Sciences. He obtained his Ph.D. in Environmental Engineering from the Chinese Acadamy of Sciences. His thesis won the President's Award of the Chinese Academy of Sciences. After graduation, he conducted postdoctoral research at the School of Chemistry, École Polytechnique Fédérale de Lausanne (EPFL). Dr. Li's research interests include the optimal design and long-term monitoring of ultraviolet (UV) reactors, as well as UV-based advanced oxidation technologies. He has developed a leading-edge photoelectric detector (namely the micro-fluorescent silica detector) and a bench-scale photoreactor (namely a mini-fluidic photoreaction system), which have had broad applications in the UV field. Dr. Li won the "2013-2015 UV Young Professional Award" from International Ultraviolet Association (IUVA).

This presentation will provide an overview of the recent development of a mini-fluidic photoreaction system (MFPS). It represents a simple, yet advanced photoreactor for laboratory and bench-scale photochemical and photobiological studies. Some unique characteristics of MFPS could facilitate innovative experiments. Several photoreactions have been studied as examples to illustrate details of the experiments and data analysis. Data from these experiments can be used to inform the design of larger-scale UV photoreactors for use in water disinfection, photolysis, or advanced oxidation processes.