



Environmental Engineering & Sciences

Department of Civil and Environmental Engineering
CEE 595AG Seminar

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Characterizing Indoor and Outdoor Air Chemistry Using Low-cost Sensors

Abstract

A new generation of small and inexpensive air quality sensors has enabled the distributed measurement of air pollutant levels at high spatial resolution, opening up new possibilities in air quality monitoring and exposure assessment. However, such low-cost sensors have seen relatively little use as tools for studying atmospheric composition and chemistry. This talk will describe our recent work developing and using low-cost air quality sensors, in order to better understand the sources and transformations of air pollutants. Sensor deployments to be discussed cover a range of environments, including: Delhi, India, to infer the sources of fine particulate pollution; the Island of Hawai'i, USA, to track the chemical transformation of pollutants (specifically volcanic emissions); and the indoor environment, to provide insights into how indoor activities affect air composition.

Bio

Jesse Kroll is a Professor at MIT's Departments of Civil and Environmental Engineering and Chemical Engineering, and is the Director of MIT's Ralph M. Parsons Laboratory for Environmental Science and Engineering. He received his Ph.D. in Chemistry from Harvard University in 2003, and was a postdoc at Caltech and then a Research Scientist at Aerodyne Research, Inc. Jesse's research group studies atmospheric organic chemistry, with a particular focus on laboratory studies of oxidation reactions, organic aerosol formation and evolution, and the use of low-cost sensors to measure gas-phase and particulate pollutants. He has co-authored over 130 papers in the peer-reviewed literature, and was a recipient of AAAR's Kenneth T. Whitby Award, the NSF CAREER Award, and AGU's James B. Macelwane Medal.

Friday, March 25th, 2022
10:00 – 10:50 a.m.

Zoom Meeting

<https://illinois.zoom.us/j/82274105644?pwd=QWRSWEthXFcQRic3U1enFLem5oQT09>

Meeting ID: 822 7410 5644
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