

**Speaker: Dr. Douglas R. Worsnop**  
Vice-President & Director at Aerodyne Research Inc.

Title of lecture : "Atmospheric Aerosol Chemistry: Climate and Air Quality"

(Lecture on 25 March 2019 at IITM)

**Abstract**

Despite much effort in the past decades, uncertainties in both climate impacts and health effects of atmospheric aerosols remain large. During the last ten years, aerosol mass spectrometry (AMS) has shown that sub-micron aerosol chemical composition is roughly 50:50 inorganic and organic worldwide, with secondary highly oxidized organics dominating the latter. Parallel application of chemical ionization mass spectrometry (CIMS) has provided the first observation of molecular cluster ions involved in atmospheric nucleation, including detection of highly oxidized multifunctional (HOM) organics in the gas phase. These results will be discussed in the context of their impact on atmospheric aerosols, air quality and climate.