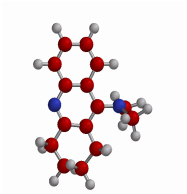
THE HONG KONG UNIVERSITY OF SCIENCE AND TECHNOLOGY

Department of Chemistry

Division of Environment

Joint Seminar



"Organosulfates in Atmospheric Aerosols"

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Abstract

Organosulfates are organic molecules contain a sulfate moiety (R-O-SO3-) and have recently been observed in aerosol organic matter. Organosulfates are components secondary organic aerosol (SOA) formed under acidic conditions, but their formation mechanisms are not well understood. A recent study characterized organosulfates at four Asian locations for the first time. Organosulfates were analyzed by ultra-performance liquid chromatography and high-resolution mass spectrometry, which allowed for experimental determination of molecular formulas and estimation of atmospheric abundance. Aerosols were analyzed from four sites spanning urban and remote locations, including Hanimaadhoo, Maldives, Gosan, Korea, Singapore, and Lahore, Pakistan. Organosulfates were found to be ubiquitous and chemically diverse, yet minor contributors to fine particulate mass. Semi-quantitative analysis yielded average estimates of OS accounting for less than 1% of PM2.5 mass, 2.3% of organic carbon, and 3.8% of total sulfate. The majority of the observed compounds were attributed to biogenic SOA from isoprene or monoterpenes, while others had anthropogenic chemical signatures. Spatial analysis revealed that organosulfates play a larger role in air masses that have undergone long-range transport, compared to locations dominated by primary sounces.

- **18 May 2012 (Friday)**
- **3:00 p.m.**
- **Chen Kuan Cheng Forum (LTH)**
  Academic Concourse, HKUST

All are welcome!