

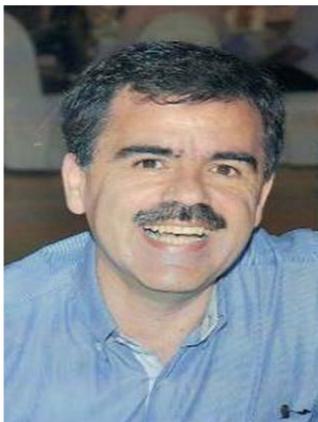
Atmospheric Nanoparticles, Air Quality and Climate Change

Frontiers in Global Change Seminar Series

Presented by...

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Abstract:

The human development of our planet has a variety of negative impacts on the composition of its atmosphere at every scale – locally, regionally, and even globally. One of these dramatic changes has been the increase in the mass concentrations of sub-micrometer particles by one to sometimes two orders of magnitude over populated areas in the Northern Hemisphere. These atmospheric aerosols can cause serious health problems, reduce visibility, contribute to acidic deposition and material damage, and are also cooling the planet by reflecting sunlight back to space.

Atmospheric particles may be emitted directly, but the majority of the mass of the small particles is formed in the atmosphere by transformation of gaseous emissions such as sulfur oxides, nitrogen oxides, and volatile organic substances. Some of the particles' sources are anthropogenic, but nature can be a significant contributor of some components. The particles over a given area can be of local origin, but they may have traveled thousands of kilometers to get there. Atmospheric chemistry occurs within a fabric of complicated atmospheric dynamics and physics. This interplay often results in nonlinear and often counterintuitive changes of the system when anthropogenic emissions change. A major goal of our research has been to gain a predictive understanding of the physical and chemical processes that govern the dynamics, size, and chemical composition of atmospheric aerosols. To illustrate the advances in the experimental techniques and theoretical tools in atmospheric aerosol science we will focus on the origins of particles smaller than 100 nm and their role in the energy balance of our planet.

See <http://www.cheme.cmu.edu/people/faculty/spyros.htm>

Please join us for a meet and greet opportunity
with Dr. Pandis after the seminar.
~Refreshments will be served~

Date: Tuesday,
April 30

Location: EMSL
Auditorium

Time: 10:00 am