

*The Conference is a special event to greet
Sandro Fuzzi who is retiring*

Aerosols, air quality, and climate

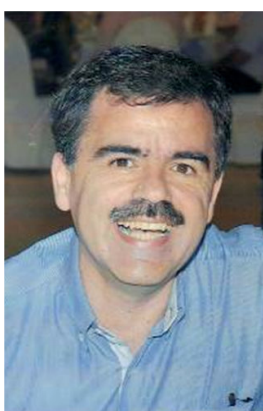
Spyros Pandis

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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, but 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. 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.

At the end all the participants will be offered refreshments



Spyros Pandis is Professor in the Chemical Engineering Department of the University of Patras in Greece and Research Professor of Chemical Engineering and Engineering and Public Policy in Carnegie Mellon University. He received his PhD from the California Institute of Technology in 1991 and joined the faculty of Carnegie Mellon University in 1993 and of the University of Patras in 2004. His research includes theoretical and experimental studies of atmospheric chemistry as it relates to urban and regional pollution and topics related to global climate change. The research team (half of it in Greece and half of it in the US) currently investigates the formation and properties of organics aerosol, aerosol-water interactions, formation and growth of ultrafine particles and develops regional chemical transport models focusing on air quality. He is the ex-president of the American Association for Aerosol Research and one of the editors of *Aerosol Science & Technology*. Spyros Pandis is the co-author of the most widely used textbook in atmospheric chemistry: Seinfeld J.H. & Pandis S. "Atmospheric Chemistry and Physics: From Air Pollution to Climate Change".

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