

## FOREWORD:

This Special Issue of *Global NEST Journal* includes a selection of papers presented at the International Conference on *Environmental Science and Technology (CEST 2009)* that took place in Chania, Greece, 3 – 5 September 2009. This Conference was the 11<sup>th</sup> of a series of biennial conferences, dating back to 1989 and like the previous ones, maintains and upgrades the integrated approach towards protection of the environment, by bringing together engineers, scientists, students, managers and other professionals from different countries, involved in various aspects of environmental science and technology. This approach, combining the integration of environmental issues with economic and social aspects, is a prerequisite for adopting sustainable solutions to numerous contemporary environmental problems. In this issue, we present 13 papers in total, spanning a wide spectrum of scientific contributions relevant to the topic of Air Pollution.

Three papers are concerned mainly with indoor air pollution. *Castro et al.* deal with the assessment of the impact of traffic emissions and tobacco smoke on the level of fine particulate matter (PM<sub>2.5</sub>) and the distribution of polycyclic aromatic hydrocarbons (PAHs) in indoor and outdoor environment. *Diapouli et al.* examine the particulate matter (PM) and elemental carbon indoor and outdoor concentration levels in Athens, in two typical microenvironments, as well as the contribution of ambient air to the indoor levels. *Estokova et al.* investigates metal substances of suspended and settled PM in residential indoor environment in the city of Košice, Slovakia.

Three papers are concerned with air quality modeling. *Hoi et al.* present a Bayesian approach to estimate the noise variances of Kalman filter based statistical models for predicting the daily averaged PM<sub>10</sub> concentrations of a coastal city, Macau. *Turpin and Harion* performed three-dimensional numerical simulations of wind flow structure over coal stockpiles of a power plant real configuration. *Latos et al.* examined the main parameters being embedded in the dispersion model AERMOD to estimate the odour impacts from existing wastewater treatment plant.

Five papers are experimental studies of outdoor air pollution. *Kopanakis et al.* examine the PM mass size distribution ambient levels at the Akrotiri station (Chania, Greece), using an Andersen non-viable impactor and determine their chemical composition, mainly on concentrations of metals and ions. *Evagelopoulos et al.* examine the seasonal variation of particulate PAHs in Kozani, Greece - an urban area surrounded by opencast coal mining - by considering their emission sources on the basis of molecular diagnostic criteria. *Kalabokas et al.* analyse the PM<sub>10</sub> measurements at two major urban areas of Greece, Athens and Thessaloniki and present results of mean monthly PM<sub>10</sub> concentrations and regional background PM levels during the period 2001-2004. *Raisi et al.* investigate the relationship between the viable airborne bacterial and fungal concentrations and the respirable PM<sub>10</sub>, PM<sub>2.5</sub>, PM<sub>1</sub> in the ambient air in the Mediterranean area. *Moussiopoulos et al.* describe an Air Quality Management System that has been developed and installed in Cyprus, introducing a modelling tool for air quality assessment and management.

The two last papers are concerned with air emissions. *Tsilingiridis et al.* present an emissions inventory for Cyprus, from all anthropogenic sources, implementing top-down and bottom-up methodologies. *Chalvatzaki and Lazaridis* deal with the determination of emissions of greenhouse gases from the Akrotiri site with the aid of three models.

In summary, this special Issue of CEST 2009, gathers papers related with Air Quality in different indoor and outdoor environments, using modeling and measurements and provides a valuable contribution to various aspects of Air Pollution assessment.

The Guest Editors of the Special Issue

*Prof. Costantinos Helmis*  
*Faculty of Physics*  
*University of Athens (Greece)*

*Assis. Prof. Helena Flocas*  
*Faculty of Physics*  
*University of Athens (Greece)*

