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International research study to shed light on sources of air-polluting dust in India

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A quantitative analysis of dust sources in Delhi by scientists from India, the UK and the USA will provide important new insight into how individual sources of air-borne matter contribute to the overall concentrations measured in the atmosphere.

Air pollution continues to be one of the key global environmental challenges and is widespread in India, with Delhi, most notably, experiencing major air quality problems. The largest public health impact is due to exposure to particulate matter – very fine dust floating in the air. Although the sources of this dust might appear obvious, for example, car and industrial emissions, wind-blown soils, diesel generators etc, little is known in India about how much each source contributes to the concentrations measured in the atmosphere.

Researchers from the Indian Institute of Technology Delhi (IIT Delhi), the University of Birmingham in the UK and the Desert Research Institute in Nevada, USA, are collaborating to provide key scientific evidence in this area, which will assist in the development of targeted policy instruments to control air pollution. Air samples will be collected in Delhi and sent to the University of Birmingham for chemical analysis. The Desert Research Institute will then analyse the collected data to estimate the contributions of different air pollution sources.

Professor Roy M. Harrison, Head of the Environmental Health Sciences Group at the School of Geography, Earth and Environmental Sciences at the University of Birmingham, said: “Exposure to particulate matter has negative consequences for human health but cost-effective abatement measures depend upon a quantitative knowledge of the contributions of different sources in the atmosphere. There is currently insufficient information specific to India so this collaborative research project will provide new, and significant, analysis.”

Dr Mukesh Khare, Professor of Environmental Engineering at IIT Delhi, added: “A source apportionment study of fine particulates in Indian mega cities, like Delhi, has been conducted recently, coordinated by the Central Pollution Control Board, New Delhi. The study provided important insight into the current status of the sources of fine particulates. Yet major gaps in knowledge still exist, mainly with reference to chemical composition of the apportioned fine particulates. In the absence of such data, it becomes difficult to formulate any kind of health assessment studies, and to provide optimal protection to the city dwellers. The current UK-India Education and Research Initiative (UKIERI) award will certainly lead to clear outcomes on chemical characterisation of the apportioned fine particles at the selected study site of Delhi city and much improved source apportionment. This will also provide us with systematic methodologies to conduct such studies at urban and regional scales”.

Results from the analysis are expected in late 2013.

The research project is one of the Trilateral Research in Partnership (TRIP) Awards, the first strand of the successful **UK-India Education and Research Initiative (UKIERI) (http://www.ukieri.org/)** to partner with the United States.

Notes to Editors

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