



UFIPOLNETnews No. 15; 1-Sep-2007

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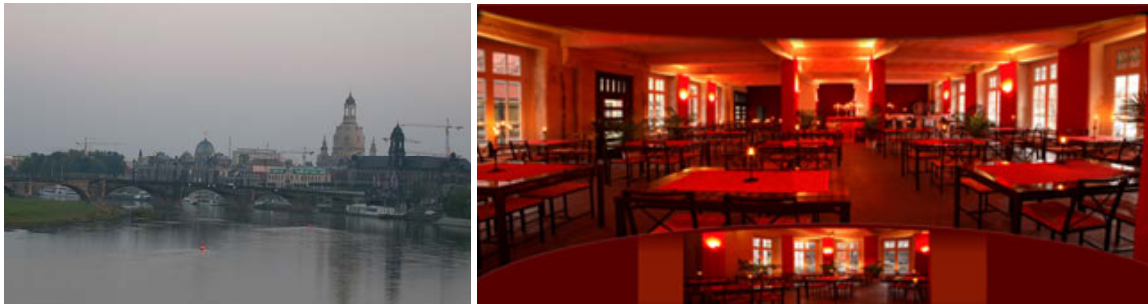
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1 **UFIPOLNET: Final conference coming soon: 23 - 24-Oct-2007(EN)**

Experts from all over Europe will inform about ultrafine particles in urban air. The partners of UFIPOLNET welcome you at the historic city of Dresden.



Best technical conditions for a discussion in the conference room at the SAB



City centre: Dresden; Enough room for the evening reception in a nice atmosphere

The final conference of the EU-Project UFIPOLNET will take place in the city centre of Dresden at the Sächsische Aufbaubank (SAB). The conference will give the opportunity to discuss results of the project in front of the background knowledge about ultrafine particles in Europe. Over 30 presentations in 5 Sessions are planned.

The fee for the conference of 100 € includes the proceedings and catering during the daytime. Evening reception will cost 30€, a champagne reception is sponsored by TOPAS.

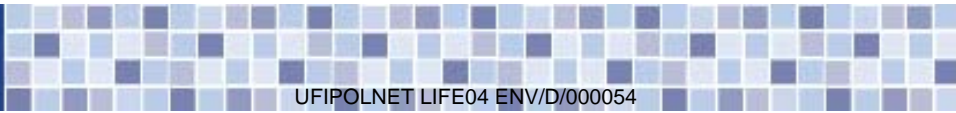
Please register by post card, by fax or via internet for this event (registration deadline 22-09-2007):

www.ufipolnet.eu -> CONFERENCE

The English version is integrated by using grey text below German text at the TOURBU-webpage. If you have difficulties with the registration process please feels free to send your registration by email or Fax to:

info@sachsen-tour.de; Fax: +49 (0) 351 4 96 93 06

Please mention that you want to participate in "UFIPOLNET" conference, if you want to participate in the evening reception and which hotel-category you are interested in (Single: 63; 77,50 or 104€). Please check the invitation-leaflet on the website for details.



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2 Positive and Negative Effects of Nanotechnology on the Environment (EN)

Nanotechnology, which involves materials and processes on an ultra-small scale, is currently an area of intense scientific research due to the wide variety of potential applications in the biomedical, optical, and electronic fields. Nanotechnology can also provide solutions for certain environmental problems. Nevertheless, little is known about the potential impacts of nanoparticles on the environment and human health, even though in some cases chemical composition, shape and size have been shown to contribute to the toxicological effects. In Europe, some major research projects are underway in this area¹.

Recently, European researchers reviewed a number of relevant research activities, in particular, projects funded under the 6th Framework Programme in order to determine both the potential positive and negative implications of nanotechnology and future research needs.

Current research shows that nanotechnology might be able to provide more sensitive detection systems for air and water quality monitoring, allowing for the simultaneous measurement of multiple parameters, a real time response capability, simplified operation and lower running costs compared to conventional methods.

Furthermore, nanoparticles can be beneficial in catalytic and remediation application. For example, metal oxide nanocatalysts are being developed for the prevention of pollution due to industrial emissions (e.g. DeNOx catalysts could be applied for the removal of nitrogen oxides from fossil fuel power plant emission gases) and the photo-catalytic properties of titanium dioxide nanoparticles can be exploited to create self-cleaning surfaces that reduce existing pollution.

On the other hand, the authors recommend taking the following aspects into consideration:

A major concern regarding nanoparticles is that they might not be detectable after release into the environment, which in turn can create difficulties if remediation is needed. Therefore, analysis methods need to be developed to detect nanoparticles in the environment that accurately determine the shape and surface area of the particles (two of the factors that define their toxic properties).

Full risk assessments should be performed on new nanomaterials that present a real risk of exposure during manufacture or use. Life cycle analysis will be a useful tool for assessing the true environmental impacts.

¹For more information on the EU action Plan on Nanotechnology:

ftp://ftp.cordis.europa.eu/pub/nanotechnology/docs/nano_action_plan2005_en.pdf.

Original Source: D.G. Rickerby and M. Morrison (2007), « Nanotechnology and the environment: A European perspective », Science and Technology of Advanced Materials 8(1-2): 19-24.

Contact: david.rickerby@jrc.it

Source: Science for Environment Policy 8 February, 2007 Issue 75

http://ec.europa.eu/environment/integration/research/newsalert/themes_en.html

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3 Laser Printers May Pose Serious Health Concern (EN)

Most laser printer pollute the air at a rate comparable to cigarette smoking, the report stated.

Certain laser printers used in offices and homes release tiny particles of toner powder into the air. When inhaled, these microparticles penetrate deep into lungs where they may pose a health hazard, scientists are reporting. One of the printers released particles into an experimental chamber at a rate comparable to the particle emissions from cigarette smoking, the report stated.



(Photo: Lidia Morawska) This printer in a Brisbane, Australia, office building contributed to higher particulate matter concentrations indoors than those outside near a freeway.

Lidia Morawska, Ph.D., and colleagues in Australia classified 17 out of 62 printers in the study as “high particle emitters” because they released such elevated quantities of particles, which the researchers believe to be toner, the ultrafine powder used in laser printers instead of ink to form text and images.

Thirty-seven of the 62 printers, on the other hand, released no particles that diminished air quality. Six released only low levels, and 2 medium levels.

Most of the printer-generated particles detected were ultrafine, Morawska said, explaining that such contaminants are easily inhaled into the smallest passageways of the lungs where they could pose “a significant health threat.”

“Even very small concentrations can be related to health hazards,” she said. “Where the concentrations are significantly elevated means there is potentially a considerable hazard.”

The health effects from inhaled ultrafine particles depend on particle composition, but the results can range from respiratory irritation to more severe illnesses, such as cardiovascular problems or cancer, Morawska said.

The study found that indoor particle levels in the office air increased fivefold during work hours due to printer use. Printers emitted more particles when operating with new toner cartridges, and when printing graphics and images that require greater quantities of toner. As a result of the study, the scientists are calling on government officials to consider regulating emission levels from laser printers.

Original source: Environmental Science & Technology (ES&T), August 1
http://pubs.acs.org/subscribe/journals/esthag-w/2007/aug/science/nl_printers.html
<http://pubs.acs.org/cgi-bin/abstract.cgi/esthag/asap/abs/es063049z.html>

Contact: Lidia Morawska, International Laboratory for Air Quality and Health, Queensland University of Technology, Brisbane, QLD 4001

Source: Toronto Daily News, 2-AUG-2007;

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4 Climate Change impacts on Human Health (EN)

Diseases such as H5N1 "bird flu" or foot and mouth disease are currently causing concern in many countries, including parts of Asia, Africa and Europe. Overall, transmissible diseases represent a serious risk to human health, contributing to about one third of all deaths occurring globally. In addition, climate change is believed to cause about 150,000 deaths every year worldwide, and by modifying ecosystems, it can create a health risk for humans.

In this context, an American researcher has recently reviewed the literature in order to explore the link between climate change and human health. He notes that disease is one example of the interaction between natural and human systems, which involve the environment, an agent (e.g. pathogen), a host (e.g. human) and a vector (e.g. insect, air). For example, increased humidity of an area is likely to increase the mosquito population and thereby the incidence of human disease.

The predicted climate change is likely to increase precipitation and temperatures and their variability, which in turn can be expected to increase the number of diseases. The authors note that there is a wide range of climate-mediated diseases or deaths, of which the most important are:

1. Heat wave related deaths: there are numerous examples of the dramatic effects of the 2003 summer heat waves in Europe when about 15,000 people died in France. The impacts of heat waves are exacerbated in urban areas.
 2. Air pollution related diseases: climate change is predicted to increase the number and frequency of days with high-ozone and high particulate matter concentrations in the air. These particles are well-known for causing respiratory problems and premature deaths.
- (...)

Original Source: Comrie, A. (2007) « Climate Change and Human Health », Geography Compass 1/3:325-339.

Contact: comrie@arizona.edu

Source: Science for Environment Policy 8 February, 2007 Issue 73
http://ec.europa.eu/environment/integration/research/newsalert/themes_en.html

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5 NOSA 8 to 9/11/2007, Helsingør, Denmark (EN)

The Nordic Society for Aerosol Research organise its next meeting at Helsingør, Denmark, 8-9 November, 2007. Special focus of the symposium:

"Airborne Nano-particles: New Technologies and impacts".

contributions covering all aspects of aerosol science are welcome.

Invited speakers are:

- *Peter McMurry (Univ. of Minnesota),
- *Andreas Mayer (TTM, Switzerland)
- *Markus Kalberer (ETH Zurich)
- *Lars Asking (Novo Nordisk)

Important dates and deadlines:

Abstract and abstract classification form sent by 24.9.2007

Registration form by 5.10.2007

*Conference fee paid by 24.10.2007

Contact: NOSA2007@dmu.dk

Source: NOSA website <http://www.dmu.dk/NOSA2007>

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UFIPOLNET = Ultrafine particle size distributions in air pollution monitoring networks
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UFIPOLNET Information: <http://www.ufipolnet.eu>

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- * Ultrafine Particles in Urban Air: 23 - 24/10/2007 Dresden *
 - * int. conference about ultrafine particles in urban ambient air *
 - * details: www.ufipolnet.eu -> conference *
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