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Dear reader,
here are NEWS for measuring ultrafine particles in ambient air and related subjects.

1 **State of the Urban Environment in European cities**
Science for Environment Policy 30 November, 2006 Issue 45 (EN)

2 **Five Grand Challenges to achieve Safe Nanotechnology (incl. air measurements)**
Science for Environment Policy 7 December, 2006 Issue 46 (EN)

3 **UBA-Bericht zu ultrafeinen Aerosolpartikeln in der Außenluft (DE)**

4 **Library of public documents of European Commission for TSAP + CAFE (EN)**

5 **"FINE! Dust-free into the Future" Int. Conference 29 to 30 March 2007; Klagenfurt (EN)**

6 **EAC European Aerosol Conference 2007: Salzberg/Austria 9.-14.9.2007 (EN)**

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1 State of the Urban Environment in European cities Science for Environment Policy 30 November, 2006 Issue 45 (EN)

Four out of five European citizens live in urban areas, and their quality of life is directly influenced by the state of the urban environment.
A recent study has assessed the urban environment in 26 major European cities, specifically focusing on local problem-solving capacity. To this end, the authors used 20 environmental indicators such as air quality, public transport, and waste and water management.
Air quality remains as the most critical element, common to all large cities. In particular, fine particulate matter (PM10) is currently the most critical pollutant. In 77% of the monitored cities, daily concentration values exceeded the current tolerated levels more than 35 days a year. Regarding nitrogen dioxide (NO2), several major cities like London, Paris, Barcelona and Rome have average annual concentrations that are more than double the EU's 40ug/m3 target for 2010, while nearly half of the 26 cities have at least one hotspot with emissions above this target. Only six cities (Heidelberg, Goteborg, Nicosia, Saragossa, Tampere and Turku) are already compliant on all the air quality parameters.

Original source: http://www.ambienteitalia.it/chisiamo_engl/pdf/Urban%20Ecosystem_EU2006.pdf
Source: http://ec.europa.eu/environment/integration/newsalert/themes_en.html

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2 Five Grand Challenges to achieve Safe Nanotechnology (incl. air measurements) Science for Environment Policy 7 December, 2006 Issue 46 (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. (…) Nevertheless, some nanotechnologies are controversial due to concern about their safety. Therefore, sound, independent, and authoritative information is required on the risks and how to avoid them.

A recent paper by an international group of researchers addresses the issue of safe handling of nanotechnology. The authors propose five grand challenges to stimulate and focus research into the safety of nanotechnology (…):

1. Development of **instruments to assess environmental exposure to nano-materials in air** and water within the **next 3-10 years**. Due to the diversity of nanotechnologies, exposure to nano-materials will vary widely. It is therefore necessary to develop multiple sensor types operating under different conditions in order to assess the ex**posure and potential impacts on health and the environment**. In particular, the authors highlight the necessity of developing **a "universal aerosol sampler"** for measuring exposure to airborne nano-materials, as well as instruments to track nano-material concentrations in water systems.
2. Development of methods to evaluate the **toxicity of nano-materials** within the next 5-15 years. (…)
3. Development of models for **predicting the potential impacts** of engineered nano-materials **on the environment and human health** within the next 10 years (…).
4. Development of robust ways of evaluating the impact**s of nano-materials across their entire life cycle** within the next 5 years (…).
5. Development of **strategic programmes to enable risk-focused research** within the next 12 months (…).

Original source: A. Maynard et al (2006) « Safe handling of nanotechnology », **Nature** 4444: 267-269.
Source: http://ec.europa.eu/environment/integration/newsalert/themes_en.html
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3 UBA-Bericht zu ultrafeinen Aerosolpartikeln in der Außenluft (DE)

Als nachträgliches Nikolauspräsent an alle deutschsprachigen Interessenten von Ultrafeinstaub in der Umgebungsluft könnte der Forschungsbericht des UBA zu Ultrafeinstaub gesehen werden, der am 8.12. auf der Internetseite des UBA erschienen ist:

Auf ca. 80 Seiten fasst dort Wolfram Birmili vom Institut für Troposhärenforschung (IfT) insbesondere die Messaktivitäten und bislang gefundenen Partikelanzahlhäufigkeiten insbesondere des Korngrößen-bereichs 10 – 100 nm in Deutschland zusammen:

- In der Zusammenschau verschiedener Stationstypen sind die Verhältnisse zwischen Partikelanzahl / PM2.5 zwischen Hintergrund- bzw. urban beeinflussten Standorten zum Straßenrand deutlich unterschiedlich.
- Für die langfristige Überwachung gesundheitsrelevanter Partikelmaße sind u.a. hinderlich: Nicht vergleichbare Messverfahren und ein nicht vorhandener langfristiger Praxiseinsatz.
- Partikel um 100 nm dringen am effektivsten aufgrund ihrer Eigenschaften in Innenräume ein.
- Partikelanzahl in Deutschland (Median 10 – 100 nm in cm^{-3}, Angaben gerundet, 25 Messorte):

Gebirge	1.000 – 2.000
ländlich	3.000 – 4.000
Städt. Hintergrund	5.000 – 13.000
verkehrsnah	10.000 – 23.000

- Effekt der Verkehrsdichte auf Unterschied Montag-Freitag/Sonntag ist in der Stadt am stärksten ausgeprägt für Partikel zwischen 3 und 120 nm.
- Ultrafeine Partikel werden aus der Gasphase neu gebildet, zur Unterscheidung von primären Partikeln aus Verkehrsquellen ist die Erfassung der Größenverteilung notwendig bzw. das Korrelations-Verhalten gegenüber NOx. Letzteres gibt den Einfluss des Verkehrs wieder.
- Maxima < 40 nm Partikel im Sommer durch photochemisch induzierte Partikelneubildung und bei Partikeln > 40 nm im Winter durch höhere Emission von Primärpartikeln im Winter (Heizung).
- Klassische Messprinzipien werden erläutert: CPC, DMA, DMPS/SMPS

- Partikelanzahl ist am höchsten im Bereich < 100 nm, während Masse und Volumen ihr Maximum bei 400 nm haben. Damit ist die Charakterisierung der ultrafeinen Partikel über Anzahlmessungen am besten geeignet.
- Empfehlungen für ein Netzwerk zur Überwachung ultrafeiner Partikel in Deutschland wird gegeben für ländliche Hintergrundmessungen (heute: Melpitz, Zugspitze, Schauinsland) und städtische Messungen (heute: Leipzig, Dresden, Augsburg).

PDF-Quelle http://www.umweltdaten.de/publikationen/fpdf-l/3114.pdf
Literatur: Birmili, W. (2006): Räumlich-zeitliche Verteilung, Eigenschaften und Verhalten ultrafeiner Aerosolpartikel (< 100nm) in der Atmosphäre, sowie die Entwicklung von Atmosphäre, sowie die Entwicklung von Überwachung in Deutschland; Umweltbundesamt, Redaktion : D. Bake; Forschungsbericht 203 43 257/05 UBA-FB 000942 ; UBA Texte 26 – 06.

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4 Library of public documents of European Commission for TSAP + CAFE

The Library of public documents of European Commission gives a couple of presentations and other documents related to the thematic strategy on air pollution (TSAP) and CAFÉ (Clean Air for EUROPE).

Source: http://forum.europa.eu.int/Public/irc/env/cafe_baseline/info/data/%2E%2E/%2E%2E/library

In the literature is a correlation found between NOx and ultra fine particles. Therefore the results of a EU level **workshop on direct NO2 emissions** from road vehicles on **19 September** are interesting to note.

Source:
http://forum.europa.eu.int/Public/irc/env/cafe_baseline/library?l=/cafe_ambient_quality/workshop_vehicles&vm=detailed&sb=Title

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5 "FINE! Dust-free into the Future" Int. Conference 29 to 30 March 2007; Klagenfurt (EN)

Organized by the City of Klagenfurt, with financial support of the European Commission.

This Conference will provide all those interested in reducing fine dust or particulate matter with a timetable into a fine-dust-free future.
KAPA GS means "Klagenfurt`s Anti-PM10 Action Program with Graz und South Tyrol". It is a demonstration project co-financed by the EU in the framework of LIFE-ENVIRONMENT.
In the period from 2004 to 2007 measures taken in Klagenfurt, Graz and South Tyrol to reduce particulate emission at local level are simulated in a computer model, tested on site and then adapted for permanent application.
Surrounded by the latest scientific findings, legal aspects as well as case reports from many European cities, measures that have been initiated and evaluated in the course of the project will be presented to an international audience. (…) Poster sessions and a company exhibition will provide a comprehensive survey of the topic of fine dust.

Target Group: environment specialists, traffic and transport experts, representatives from public administration, politics, science and economy in Europe

Date: 29 March to 30 March 2007
Venue: Klagenfurt am Wörthersee (Carinthia, Austria)

Congress fee: EUR 130,- upon registration until 15 December 2006, afterwards EUR 160,-
Simultaneous translation: English, German, Italian

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content: Wolfgang Hafner, Department of Environmental Protection of the City of Klagenfurt, tel. +43 (0)463 / 537-4885, wolfgang.hafner@klagenfurt.at

For more information and registration:
www.feinstaubfrei.at/htm/eng/abschlusskongress.htm, www.kapags.at.

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6 EAC European Aerosol Conference 2007: Salzberg/Austria 9.-14.9.2007

Date:	9.-14.9.2007
Venue:	Salzberg, Austria
Abstract deadline:	15.2.07
Congress fee:	EUR 325 upon registration until 01.07.2007, afterwards EUR 425 (Prices are reduced for students and EAA-members)
Themes:	Aerosol Chemistry; Aerosol Filtration; Aerosol Instrumentation; Aerosol Modelling; Aerosol Standards; **Atmospheric Aerosols;** Bioaerosols; Combustion Aerosols; Electrical Effects; **Fine Particles;** Fundamental Aerosol Physics; High Temperature Aerosols; Indoor Aerosols; Industrial Aerosols; Lung-Particle-Interactions; Medical Aerosols; **Nanoparticles; PM10 / PM 2.5;** Radioactive Aerosols; Remote Sensing of Aerosols

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For more information and registration: www.gaef.de and http://www.gaef.de/frames/pdfflyer/EAC2007.pdf

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I wish all readers Merry Christmas and a Happy New Year 2007!

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