

Media communiqué

Duebendorf / St. Gall / Thun, 3rd September 2007

8th International Conference on Emissions Monitoring

Targeting emissions – an international, interdisciplinary effort

On September 5th and 6th about 200 scientists and specialists of 34 countries from industry and the regulatory bodies gathered in Duebendorf for the CEM 2007 meeting, the 8th International Conference on Emissions Monitoring. The range of topics covered by the lectures, presentations and discussion sessions covered not just the detection, identification, avoidance and reduction of harmful gaseous emissions, but also environmental legislation, standardization and further development of analytical techniques. Also participating in the meeting were 30 instrument manufacturers, exhibiting their most recent products and services.. After being hosted by Britain, the Netherlands, Denmark, Italy and France, this year it was Switzerland's turn, represented by Empa, to welcome the CEM community.

One of the principal aims of environmental protection is avoiding harmful emissions (or reducing them as far as possible) in order to shield mankind from dangerous substances in the air, the soil and in natural waters. An essential tool in this process is the monitoring of gaseous emissions, showing where pollutants originate and how they are transported across the world. Critical to the monitoring activities is the ability to make measurements that are as accurate as possible, so as to be able to identify the smallest concentrations of harmful substances. One of the focal areas of this year's conference was therefore the international standardization of measurement procedures, according to CEM 2007 organizer and Empa researcher Lukas Emmenegger. "The aim is to ensure that all over the world, measurements are made the same way to yield comparable results."

Another topic covered during the meeting, and which gave rise to animated discussion, was the need to determine mass flow, and not limit the techniques to concentration measurements. Emmenegger concedes that these are necessary but by no means the last word on the subject. "We need to move onward from the concept of emission limits and start working out the flow rates and mass balances of individual pollutants," maintains the Empa expert. Only then will reliable information on the total quantity of greenhouse gases or other pollutants emitted be available. Data, which is needed to take appropriate environmental protection measures and to fulfill the international treaties involving emission inventories.

Another question took center stage in the debate on climate change, namely how to differentiate between carbon dioxide emissions which affect the earth's climate (such as those from fossil fuels) and those which are biogenic (i.e. climate neutral). In this context Empa scientist Joachim Mohn presented the latest results of

his work using isotope analysis, a technique which measures the proportions of carbon atoms of different atomic weights, thereby giving researchers information on the origin of the emitted CO₂. This enables scientists to determine whether the emissions in question contribute to the greenhouse effect.

Fine particles and nanoparticles also had their platform at the CEM 2007. In Lukas Emmenegger's opinion it is no longer sufficient in this context to merely measure the total quantity of particulate matter. "The latest instruments provide data on the size distribution and chemical composition of the particles." All (nano)particles, it must be remembered, are not created equal; the behavior of these tiny specks of matter – and therefore the effect they have on humans and the environment – varies radically depending on their size and composition.

Internationality paired with interdisciplinarity

With its three lectures and two poster presentations, Empa as organizer and host to the CEM 2007 made a significant contribution to the scientific content of the conference. The international and interdisciplinary make-up of the speakers and participants reflected the nature of the problems being tackled. "Environmental pollution, above all in the atmosphere, does not respect national boundaries. We can only solve these kinds of problems through global cooperation," says Emmenegger.

Representatives from El Salvador, Kazakhstan and several «neo-EU countries» took part in the conference this year for the first time, some to learn more of the essential details of the problems being tackled. That this effort pays off is demonstrated by the example of Marta Escoto de Tejada from El Salvador, who has already been a guest of Empa several times, attending courses and undertaking research in the institution's laboratories. Back in her home country she has already successfully been putting into practice the concepts she has learnt, heading the only emissions measurement laboratory in the country and training measuring technicians. She related her experiences at the conference.

The CEM 2007 was sponsored by, among other bodies, the Joint Research Centre of the European Commission, the Swiss Federal Office for the Environment (BAFU), the Luftunion (Swiss Society for Air Quality Measurement) and the Cercl'Air (Swiss Society of Air Quality Professionals).

The CEM 2007 is climate neutral!

An international event such as the CEM 2007 consumes a certain quantity of resources and in doing so generates greenhouse gases such as CO₂ – in total about 100 tonnes. Of this figure, 96% is emitted during air travel to the meeting, one per cent is generated by the use of other means of transport such as rail or road travel, two per cent is caused by the catering activities and the remaining one per cent falls to infrastructure (e.g. building operations, waste disposal and the like). To compensate for the CO₂ emissions caused by the conference and its participants, a proportion of the conference fees will be forwarded to «myclimate». This organization supports worldwide projects to protect the earth's climate. For more details please see www.myclimate.org

Technical information:

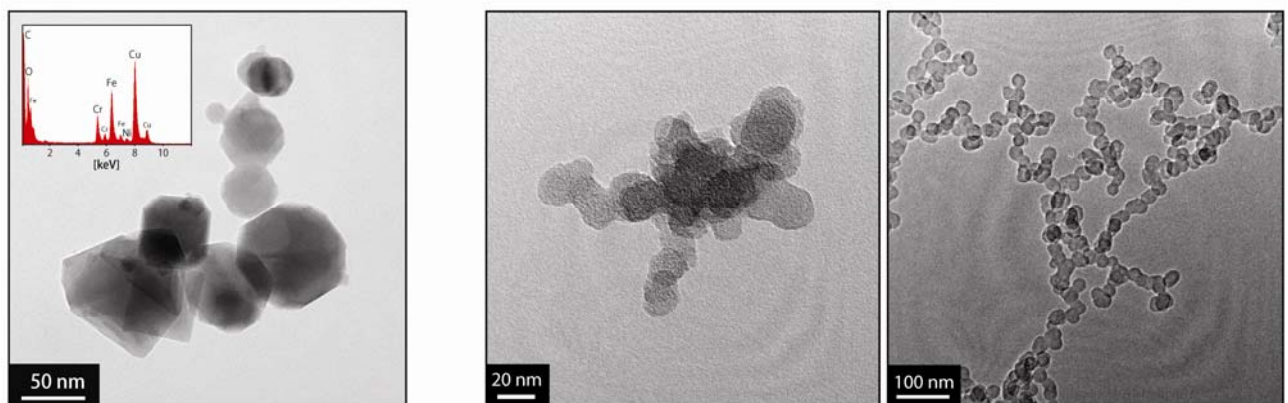
Dr. Lukas Emmenegger, Air Pollution / Environmental Technology Laboratory, Tel. +41 44 823 46 99, lukas.emmenegge@empa.ch

Editor:

Rémy Nideröst, Communication Dept., Tel. +41 44 823 45 98, remigius.nideroest@empa.ch



Innovative measuring techniques ensure that modern waste incinerator plants emit practically no pollutants.
(Photo: Waste incinerator, Niederurnen)



Of increasing importance in emission monitoring are the sizes and chemical compositions of fine particles.

L-to-r: mineral particles, soot and soot which has aggregate to form typical chain structures

Images are available in digital form from remigius.nideroest@empa.ch