

# ExIS Newsletter, September 2011

## Preamble

*The breaking news in this issue of ExIS newsletter is that Control Sistem's micro and mini dilution systems have received a TÜV certificate. In this newsletter, we also provide an extensive list of product news from our partners and invite you to the NOSA symposium in Tampere in November.*

## Headlines

### **Control Sistem's micro and mini dilution tunnels approved by TÜV**

Control Sistem has received certificates from the German TÜV for the Micro-PSS and PSS-20 dilution and particle mass emission measurement systems.

### **Meet IONER at the NOSA seminar**

IONER will exhibit at the exhibition at the NOSA (Nordic Society for Aerosol Research) symposium in November. You can also meet IONER at the [Dekati/IONER seminar](#) in conjunction with NOSA.

### **Product news from Dekati**

An update on the development on the new Dekati ELPI+™ instrument, with new features and accessories is provided.

### **Product news from Grimm**

An overview of data logging and display of data on the Internet is provided. Grimm has monitored atmospheric dust from the recent volcano eruptions thereby enabling right flight decisions. The Grimm 1.108 particle instrument is approved for PM10 tests on surface cleaning machines.

### **Product news from Matter Aerosol**

A brochure for DiSCmini, which was recently launched, is now available. DiSCmini is a handheld instrument for measuring nanoparticles in the range of 10 to 500 nm.

### **Product news from Pegasor**

The Pegasor PPS-M sensor has been updated after the summer 2011. Interesting results have lately also been generated and reported at scientific conferences such as EAC 2011, the SAE Congress and ETH Nanoparticle Conference.

### **Product news from Topas**

In the last newsletter, the Topas HDS 561 high-dilution ratio diluter was introduced. We now provide additional and updated information about this novel dilution technology.

### **Conferences, exhibitions and workshops**

Jointly with our partners, ExIS will participate in is the [NOSA symposium](#) in Tampere in November. An update on other conferences and exhibitions is also provided.

## Control Sistem's micro and mini dilution tunnels approved by German TÜV

Currently, type approvals for measurement instruments are not issued by EU or any authority. It is up to the instrument manufacturer to prove that the requirements are fulfilled. As this is not always a satisfactory solution, Control Sistem commissioned German TÜV to conduct a "third party" assessment and has now received Certificates from TÜV that both Micro-PSS and PSS-20 fulfil the requirements for all major emission standards.

A much-appreciated feature of the updated Micro-PSS is that it now also fulfils the US EPA 1065 regulation for particle mass measurement (note the heated and insulated dilution tunnel in the picture; a modification for EPA 1065). That is important not least for manufacturers of marine engines and others where on-site measurements must be carried out. The outstanding low weight is a major advantage and makes it the only dilution tunnel of this size that fulfils all future particle emission regulations.



Links to the certificates are provided below. Please [contact us](#) if you also want to obtain the test reports.

[Micro-PSS certificate](#)

[PSS-20 certificate](#)

[Micro-PSS brochure](#)

[Micro-PSS description](#)

## Meet IONER at NOSA



The Spanish company IONER (ION Explorer by Ramem), a very qualified and research oriented company, will demonstrate their instruments at the NOSA (Nordic Society for Aerosol Research). You can also meet them at the [Dekati/IONER seminar](#) in conjunction with NOSA.

Dekati and ExIS jointly distribute IONER instruments in the Nordic countries. The product portfolio of IONER includes optic instruments, electrometers, control equipment, chargers and aerosol generators.

In particular the X2 "sniffer", an ION-DMA instrument for detecting Volatile Organic Compounds (VOCs), should be mentioned. The

measuring of molecular ions is another interesting feature in their electrometer for particle recording.

[IONER home page](#)

## Product news from Dekati

### ELPI+ update+

ELPI+ development continues with new features and accessories. Sintered collection plates are now available for ordering and a heated setup is in the pipeline. Firmware update via the USB port, digital output and the AK protocol for automotive applications will soon be available. The delivery time has been decreased to 2 – 4 weeks and the instrument is available for [demonstration](#). Further details about ELPI+ are listed in the following documents.



[ELPI+ brochure](#)

[Dekati newsletter about ELPI+](#)

## Product news from Grimm

### Live data on the Internet with Grimm EDM instruments

The Grimm data logger (1142.M5) was introduced in 2010 and has since then been further developed. Due to all additional features it's now named "Central Communication System", or CCS. CCS is already integrated in e.g. EDM 365, EDM 665, Nanocheck and SkyOPC and available as an option in all other Grimm EDM instruments.

The CCS has an internal storage on a Micro-SD card. A number of ports are available for communication, such as, RS 232 (4 pcs), RS 485/422 and Ethernet. For wireless communication, GSM/GPRS (or optional, UMTS) is available. GPS is used for positioning. The CCM also contains a web server, so the instruments can be connected to the Internet



via one of the available ports mentioned above. The instruments can also be remotely operated via Internet, which is a very convenient feature for supervision of the instruments.

Register on the Grimm Internet home page to get access to some of the instruments that show public data on the Internet.

You can find a short presentation about CCS for downloading below, along with a couple of other documents about EDM instruments.

[CCS presentation](#)

[EDM 180 brochure](#)

[EDM Catalogue](#)

[Recommended instruments \(in Swedish\)](#)

[Recommendation from Swedish EPA \(in Swedish\)](#)

### Volcanic dust monitoring

The volcanic eruptions at Eyjafjallajökull last year and Grimsvötn recently triggered Grimm to launch measurement methods to assess the threat for aviation. Grimm Environmental Dust Monitors were

used to measure particle mass and size distributions in real time and is now part of a global monitoring venture.

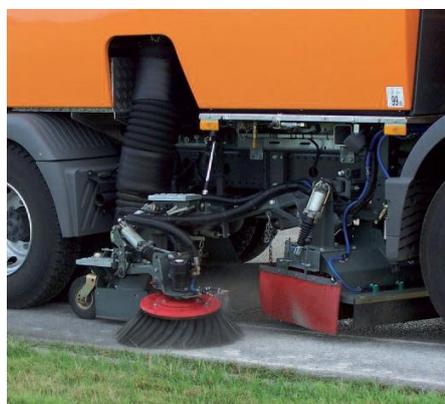
The composition of the ash is crucial to find out whether the counted particles are a threat to aircrafts or not. Two dust measuring stations near the volcano could detect quantities of several 10 000  $\mu\text{g}/\text{m}^3$ . By these extremely high counts the predictions, by standard calculations, would have been bad enough to close down the Iceland Airport Keflavik. But by measuring the actual particle number and sizes, the Airport Keflavik of Iceland could safely have been reopened.

More about volcanic dust measurement can be found in the August newsletter from Grimm Aerosol.

[Grimm's August newsletter](#)

### **EUnited PM10 Certificate for Municipal Equipment**

EUnited, the European Cleaning Machines Association, has defined a new test method for fine dust emitted by sweeping engines. The Sweeper Section of EUnited covers manufacturers of surface cleaning machines for outdoor applications on public areas, roads, airports and industrial plants representing more than 90 % of the European market. These cleaning machines range from truck-mounted sweepers, where the sweeping attachments are fixed or mounted on a standard vehicle-chassis, to self-propelled compact sweepers with a specially designed chassis, using integrated sweeping attachments and associated sweeping equipment.



The Sweeper section developed the EUnited PM 10-Test, the test procedure for measurement of the fine dust swirled up during sweeping. The tested sweepers are identifiable by the EUnited PM10-Test label, now widely adopted across Europe. The objective of EUnited is that the new test procedure will be incorporated as European standard by the European Standardisation Institute CEN.

The Grimm 1.108 particle counter meets the demands in the EUnited PM 10-Test.

<http://www.eu-nited.net/municipalequipment/index.php?idcat=58>

[EUnited PM10-Test flyer](#)

## **Product news from Matter Aerosol**

### **DiSCmini brochure is now available**

The brochure for the "Diffusion Size Classifier" or DiSCmini from Matter Aerosol is now available for downloading (use link below). This unique hand-held size classifier has gained a lot of interest lately. DiSCmini can be used in many applications where, until now, full-size instruments have been the only option.

[DiSCmini brochure](#)

[DiSCmini flyer](#)

[Matter Aerosol website](#)



## Product news from Pegasor

### New updated PPS-M for delivery after the summer 2011

The PPS-M sensors delivered after the summer 2011 will incorporate a number of improvements. There are improvements both in the electronics (less noise and drift) and the mechanical hardware (flow path) that will improve signal quality and the already very good time response. We can now also offer the AK protocol for communication with a host PC in the test cell. This is a most welcome feature in the automotive industry. Later, we will also be able to provide communication via the CAN bus.



Please also look at the latest publication on PPS-M, as shown in the news below. We now have the latest version of the PPS-M sensor available for demonstration (contact us via [e-mail](#) or phone: +46-73 944 34 01).

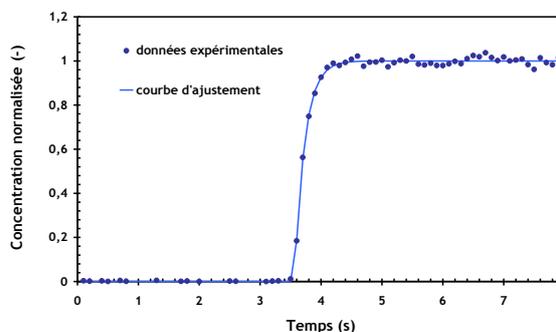
#### [PPS brochure](#)

### Interesting scientific publications on Pegasor PPS-M

An evaluation of the time response of the Pegasor PPS-M was presented by the French Institute IRSN at the European Aerosol Conference (EAC 2011) in Manchester, September 4-11. In this very comprehensive laboratory study an aerosol generator and synchronized magnetic valves were used to make step changes of the concentration (up/down). Characteristic time response for a step increase was  $\sim 0.18$  s and  $\sim 0.23$  s for step decrease. A very good linearity (vs. CPC) for a defined particle size was found.

A report (in French) on this topic with further details has also been published by IRSN.

A comment from Pegasor staff is that the new electronic unit introduced this autumn, as described above, improves time response in comparison to the PPS-M version tested by IRSN. Increasing the flow through the sensor is another way to further improve the time response.



#### [EAC presentation](#)

Two interesting papers/presentations with tests using the Pegasor PPS-M sensor were made at the ETH Nanoparticle Conference by West Virginia University (WVU). WVU has tested the PPS-M sensor in various applications such as, e.g. engine and chassis dynamometers as well as in on-board applications for in-use testing.

#### [WVU \(Besch\) at ETH](#)

#### [WVU \(Cozzolini\) at ETH](#)

Efforts to develop a sensor for on-board diagnostics (OBD) of diesel vehicles are intensive as diesel particulate filters (DPFs) have become widespread around the world. A study on this topic was presented at the SAE Congress in April 2011 by the Aristotele University in Thessaloniki and Pegasor. The PPS sensor was successfully tested for OBD diagnosis of damaged DPFs (see XCT scan on cracked filter in the picture to the right) in real-exhaust of a diesel car and a diesel engine. The sensor provides high resolution and sensitivity superseding OBD requirements.



The presentation from the SAE Congress on the Pegasor PPS sensor is now available for downloading via the link below and a link to the abstract is also included.

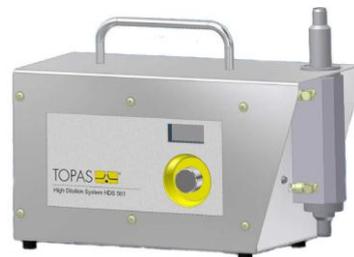
[SAE Presentation](#)

[Abstract at SAE Website](#)

## Product news from Topas

### Update on the HDS 561 dilution system for very high dilution ratios

First deliveries of the new Topas dilution system for very high dilution ratios, HDS 561, were made during winter and spring 2011. HDS 561 is particularly suited for but not limited to clean room validation and filter testing where the difference between upstream and downstream concentrations is very high. The dilution ratio is adjustable from 1:100 to 1:1 000 000 and the sample flow rate can be customized from 2,8 to 100 l/min. The pressure drop is very low due to the single stage dilution. In-service reliability is high due to the relative big diameter capillary. Check and control of the dilution ratio can be made via remote control.



[HDS 561 brochure](#)

## Conferences, exhibitions and workshops

### NOSA 2011, 10-11 November

NOSA (Nordic Society for Aerosol Research) organize conferences annually in one of the Nordic countries, within the field of aerosol science and technology.

This year's symposium is organized together with FAAR (The Finnish Association for Aerosol Research). The symposium is held at the Tampere University of Technology.

Many of our partners will exhibit aerosol instruments at NOSA. We will provide an update on this later. You can also participate in the dedicated Dekati/IONER seminar, which is held in conjunction with NOSA (see below).

[NOSA 2011 official website](#)

### **Dekati/IONER seminar in conjunction with NOSA, November 09**

The annual NOSA symposium will be held in Tampere 10-11 November (see note to the far left). The 9th of November a joint seminar will be held by Dekati and IONER to show and demonstrate new products from these two companies. You will find an invitation with a preliminary programme below.

[Invitation](#)

### **Grimm webinars in 2011**

We would like to hint you to Grimm's Web Seminars, or "webinars". That is a very cost-effective way to collect information as no travel costs are involved. The webinars are announced on Grimm's web site with relatively short notice, so please check frequently.

You will need to install Skype on your computer to follow a webinar. Registration at the Grimm home page is also required. Participation in Grimm webinars is free of charge.

[Grimm webinars, schedule](#)

### **ETH Nanoparticle Conference**

The 15<sup>th</sup> ETH-conference on Combustion Generated Nanoparticles was held in Zurich, June 26-29. A number of our partners (e.g. Dekati, Grimm, Matter etc.) participated there in the Exhibition, poster sessions or with presentations.

The documentation from the conference was recently distributed. For your convenience, we have listed a couple of presentations and posters below. These are publications where our products have been used. The list is grouped for manufacturer and instrument respectively, with the name of the main author for the link.

### **Dekati, ELPI & diluters**

[Fuglsang](#)

### **Grimm Aerosol, CPC**

[Gan](#)

[Mamakos](#)

### **Matter Aerosol, DiSCmini**

[Brändli](#)

[Fierz](#)

[Meier](#)

[Phuleria](#)

### **Pegasor, PPS-M**

[Besch](#)

[Cozzolini](#)

[ETH Nanoparticle conference](#)

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You are always welcome with questions and we are happy to send you our newsletter.

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Best regards,

Peter Ahlvik and Staffan Larsson

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## ExIS AB

ExIS represents the Finnish companies DEKATI and PEGASOR, the German company TOPAS, the Swiss company MATTER ENGINEERING, the Italian company CONTROL SISTEM and the French company ECOMESURE in the Scandinavian and/or Nordic countries. We also represent the German company GRIMM AEROSOL TECHNIK in Sweden and the Spanish company IONER in Denmark and Norway. Detailed information about these companies and their products can be found at our [home page](#).

ExIS provide equipment and instruments for sampling, dilution and measurement of particles in air, exhaust and other gases. Our customers are at universities, research institutes, municipalities, hospitals, automotive industry, shipping companies, combustion applications, electronic industry, mechanical industry, metallurgical industry, process industry, pharmaceutical industry and filter manufacturers.

### [More information](#)

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Do you have questions or comments? Send an e-mail to: [info@exisab.com](mailto:info@exisab.com) or phone +46-8-647 45 99