

Welcome to the first issue of the SPECTRO Live in 2009!

We've been very busy here at SPECTRO in the last few weeks; with lots of new and interesting information to report about our instruments and their application areas.

Changing the SPECTROMAXx was not very easy. After all, it's been setting standards for other metal analyzers to meet since 2005. Our title story deals with the details that have been improved in the fifth generation.

Innovations for the SPECTRO GENESIS and SPECTRO ARCOS are first visible at a second glance. Both instruments now run with the new SMART ANALYZER VISION 4.0 software release.

And that's not all! We also want to let you in on all sorts of news about the MIDEX, xSORT and SPECTRO iQ. So, have fun with this issue of the SPECTRO Live!

## What's in, What's new?

**No Compromise:  
The SPECTROMAXx  
Metal Analyzer**



**Simple, Efficient and  
User-friendly:  
SMART ANALYZER VISION**



**Facelift:  
SPECTRO GENESIS  
has a New Look**



**More than Metal:  
New application Areas for  
the SPECTRO xSORT**



**Golden Boy:  
Even More Flexibility for  
the SPECTRO MIDEX**



**Close to the Coast:  
Bunker Fuel Analysis with  
the SPECTRO iQ**



## SPECTROMAXx: No Compromise

*At the [Control Exhibition](#) in the beginning of May, SPECTRO presented the long awaited fifth generation of the [SPECTROMAXx](#) metal analyzer. The new models are even easier and more intuitive to operate, are especially serviceable and simple to maintain due to rearrangement of the internal components and ensure extremely attractive operating costs with the new argon saving module.*

It was not an easy thing to improve the SPECTROMAXx: The price/performance ratio of SPECTRO's [stationary metal analyzer](#) has been breaking records for years. The sales figures speak for themselves: 3,500 SPECTROMAXx sold worldwide since 2005; a respectable number even for SPECTRO.

"The SPECTROMAXx is the standard in metal analysis today; new instruments try to meet its mark – one that still hasn't been met yet. In order to keep it this way, we continue to put this instrument to the test; always trying to bring out that extra bit of performance," explains Product Manager Kay Toedter. The newest generation possesses numerous improvements: The SPECTROMAXx has become even more economical, more flexible and easier to use. It offers customers many additional options, for small parts analysis for example. Toedter is confident that the instrument will maintain its leading market position after its re-launch: "Our complete package with excellent technology and worldwide onsite service continues to be top of the line."

Read more about the new [argon saving module](#) and [small parts analysis with the SPECTROMAXx](#).



**The SPECTROMAXx has become more economical, more flexible and easier to use.**

## Save Night for Night

*The argon consumption of an analytical instrument plays a large role in determining its operating costs; a good reason for SPECTRO developers to tackle the consumption rate of the SPECTROMAXx for its re-launch – and to effectively reduce it with an innovative saving module!*

“There is a very simple idea behind the argon saving module,” reports Product Manager Kay Toedter: “If we can be successful in reducing the argon consumption of the SPECTROMAXx to zero during idle time, then we can minimize the already optimized operating costs.”

Putting this into practice was not without its problems, however: In order for the [SPECTROMAXx](#) to be ready to go every morning, its spark stand and optical system must be punctually supplied and pre-flushed with argon before work begins. To keep this startup time as short as possible, [SPECTRO](#) had to almost completely automate the system start,

explains Kay Toedter: “As soon as the user turns off the spark generator for the evening, the saving module reduces the flush to zero. The technician programs the time at which the system is required the next day. The system then automatically starts itself up and flushes the spark stand and optic with [argon](#) in time for the first measurement.” Night for night, a number of liters of argon can be saved. During longer idle periods, e.g., on the weekend or for works holidays, the savings are of course even greater.

In addition to the argon saving module, the analysis of small samples with the new SPECTROMAXx has also been substantially improved. [Read more!](#)



## Large Improvements in the Analysis of Small Parts



*Ever more industrial laboratories use the [SPECTROMAXx](#) to examine screws, pins, wires and thin sheets made of iron, aluminum or copper. No wonder that optimizing small parts analysis had such a high priority in the redevelopment of the SPECTROMAXx.*

Predefined method packages, covering the major portion of standard applications for small parts analysis, are now available for the SPECTROMAXx. Parallel to this, a set of fundamentally revised adapters are now available for the SPECTROMAXx; small parts and wires can be securely fixed over the analyzer's measuring aperture. "Laboratories can increase their sample throughput rates and achieve more reproducible results for large measurement series," promises Toedter.

With the introduction of the fifth product generation, the SPECTROMAXx software has also been changed: The instrument now utilizes "SPARK ANALYZER VISION" known from the SPECTRO flagship [SPECTROLAB](#).

### **Simplified Maintenance!**

The SPECTROMAXx now possesses an integrated diagnosis system that continuously informs the user of the system status. Malfunctions can be more quickly rectified and service calls are less complicated. SPECTRO also rearranged the internal components to simplify maintenance: It is no longer necessary to remove components in order to change the filter or filter cartridge; the UV lens can also be externally cleaned and replaced.

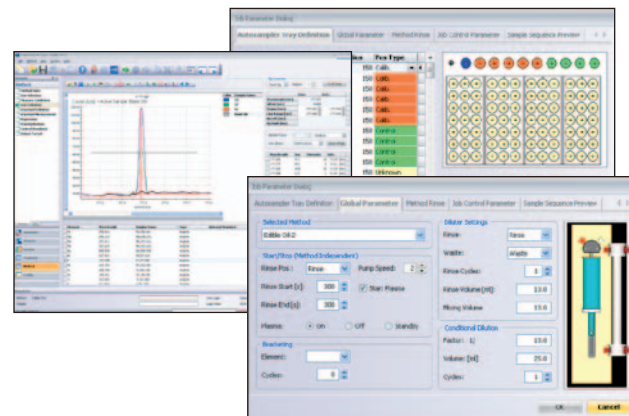


## ICP-OES Software in Office Look

*This year at [Pittcon](#), SPECTRO's highlights included not only many instruments, but also the new SMART ANALYZER VISION 4.0 software: The new system software for the [SPECTRO ARCOS](#) and [SPECTRO GENESIS](#) ICP-OES instruments. The current update is something special. The software has been completely revised. The user interface is now similar to the Vista design – the palette of functions re-worked and expanded.*

The increased performance capacity was not obtained at the expense of operability. In contrast: “The new release is definitely our most user friendly software ever. If you can work with Outlook or Excel, you’ll be able to find your way around our software too,” promises Product Manager Olaf Schulz, who values above all the flexible configuration options. “Experienced users can implement just about any imaginable requirement with the many new functions. Laboratories can also set the interface so that only the absolute basic functions are visible. This makes it easier for beginners to become acquainted with the instrument.”

Read more about the new functions in the ICP-OES software [here](#).



[SMART ANALYZER VISION 4.0](#) is based on the design of the Office products: A central navigation bar is used to move within job oriented views; all instrument functions are available from here.



## Simply More Efficient: The New Functions in the 4.0 Release

*Practical experience leads to the best innovations. This is why SPECTRO involved its users from the very beginning during redevelopment of the SMART ANALYZER VISION software. Their requirements, wishes and criticisms came together to bring about dozens of innovations for daily use.*

“Most of the changes in version 4.0 originated with input from our customer base,” confirms Product Manager Olaf Schulz. This includes functions like storage of the complete spectrum and the current method version with every measurement; supplying laboratories with many new options for post processing – even to later providing additional element contents without having to re-conduct the analysis.

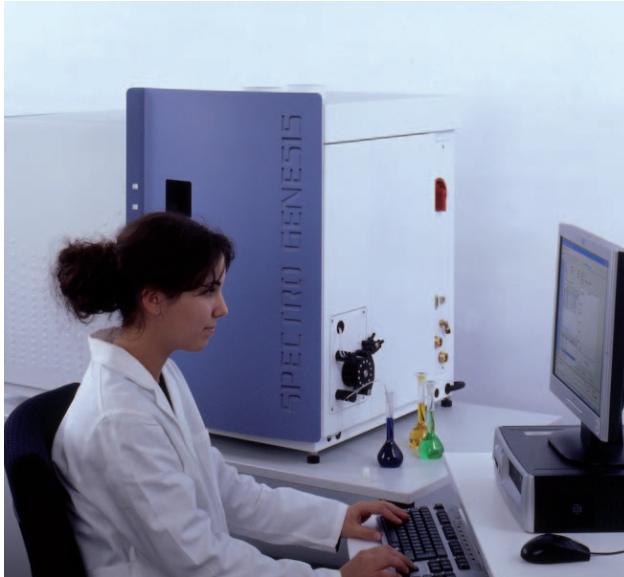
The new software is also equipped with many additional import, sorting, filtering and configura-

tion options. “Users have numerous proposals for simplification of processes in the laboratory – and will notice a higher sample throughput right away,” explains Olaf Schulz.

[SMART ANALYZER VISION 4.0](#) is now being delivered with all SPECTRO ARCOS and SPECTRO GENESIS ICP-OES instruments. The software is pre-installed on either Windows XP or Windows Vista based PCs.



## SPECTRO GENESIS with a New Look



**ICP-OES products in partner look: The SPECTRO GENESIS has been made to look similar to the larger ARCOS.**

It is now more difficult for the [SPECTRO GENESIS](#) to deny its close relationship to the SPECTRO ARCOS: This spring, SPECTRO raised the inexpensive ICP to the state of technology – including an external facelift.

The new housing is the most visible, but not the only result of the renovation; the framework of the re-launch includes a number of detail improvements: The ICP-OES analyzer now utilizes the proven high power supply found in the SPECTRO ARCOS systems, which provides much more constant operation with higher system stability.

A final novelty won't even be noticed at first: The SPECTRO GENESIS now operates using the new [SMART ANALYZER VISION 4.0](#) release as the standard system software.

“The SPECTRO GENESIS now verifies whether or not the analysis is in accordance with specifications after every measurement. If not, the analysis is marked accordingly.”

*Olaf Schulz, Product Manager for ICP OES at SPECTRO*

## More than Metal!

The SPECTRO xSORT handheld XRF instrument has been creating serious interest in the metal analysis industry since its September 2008 introduction. Industrial and environmental laboratories can also profit from the flexible, light weight instrument with short measuring times and excellent measuring accuracy. A version tailored to RoHS compliance screening as well as the analysis of soil and ore is now available.

At first, the new [SPECTRO xSORT](#) appears to be the same as the metal version. The hardware was only slightly modified, but the software and the pre-installed method packages are brand new – and this time, also setup for the fast, non-destructive screening analysis of non-metal samples.

The heart of the new model is a high performance silicon-drift detector that processes signals ten times faster than the silicon-PIN detectors conventionally used in handheld XRF instruments. In practice, this means no matter what the sample material, the contents of all of the important elements from silicon to uranium are displayed on the integrated PDA after

only a few seconds. Looking for more examples? Let's examine some concrete [applications!](#)

"The high readout rate of the detector makes the xSORT extremely flexible. Users can either analyze especially fast with the xSORT – which is a great advantage for RoHS analyses – or they can spend the same amount of time as before and process ten times more signals; ideal for achieving better detection limits for toxicological analyses."

*Dirk Wissmann, Product Manager for XRF at SPECTRO*



## Practically Speaking 1: SPECTRO xSORT RoHS Screenings ...

*Have you already filed [RoHS](#) and lead screenings ad acta? If so, you may have been a little hasty: In 2008 in the USA, lead residues were found on several occasions in toys, jewelry and cosmetics resulting in penalties and fines. Since then, the elements lead, cadmium, chromium, mercury and bromine have once again become a worldwide issue along with others such as, arsenic, selenium, antimony and barium.*

The [xSORT](#) is ready to deal with this issue: The handheld XRF instrument scores points in compliance screening as a non-destructive, flexible and inexpensive analytical system. Its high measuring speed is a large advantage. When a storage clerk has to analyze 300 DVD players at a time, it makes a big difference if he or she has to hold the analyzer still for 30 or 90 seconds. With the xSORT, the end of the workday is not only earlier, but there is also no muscle ache involved. Additionally, the time savings add up quickly to several hours for the respective high number of pieces – effectively sinking costs. Whether thin or thick – where samples have to be cut up to obtain reliable analyses with other systems – the xSORT manages such samples non-destructively. Plastic, ceramic or metal, all samples are analyzed with a single analytical method – without additional entries and without additional pre-measurements.

The xSORT is also very convincing in [environmental applications](#).





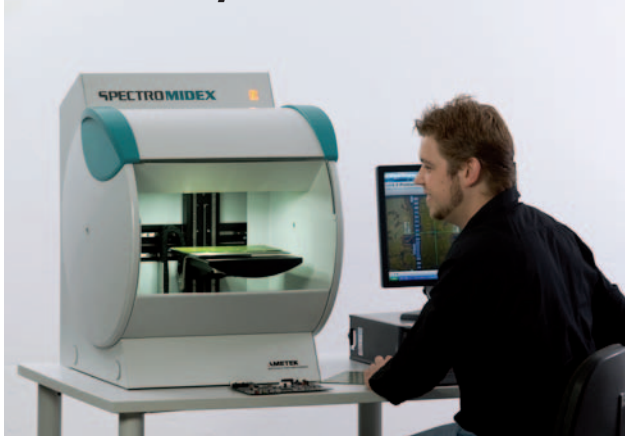
## Practically Speaking 2: ... and Environmental Applications

A second important area of use for the new [xSORT](#) version encompasses rapid screening for environmental analysis. With the xSORT, it is possible, for example, to determine the composition of soil, sludge or rock samples – or to test whether or not an old telephone pole was treated with a wood preservative that is no longer permitted. Additional equipment is already available for the xSORT for especially accurate results and easier operation. The instrument is available with a practical docking station or with a GPS module that makes a protocol of every testing site for geologists.

Find out more about the applications of SPECTRO xSORT in the new brochures "[SPECTRO xSORT for RoHS Compliance and Pb Screening, Environmental and Mining Applications](#)" and "[SPECTRO xSORT for Onsite Metal Analysis, Metal Alloy Identification/Sorting and Precious Metals Analysis/Sorting](#)".



## Golden Boy – The Third Generation



When the [SPECTRO MIDEX](#) came onto the market in 2005, it was considered to be a specialist for jewelry and precious metal analysis. But it soon became apparent: The MIDEX can do more! The micro XRF analyzer continued to capture new areas of application. The most recently introduced third generation is already a true specialist for many applications – and just as interesting for jewelers as for test laboratories for, e.g., electronics manufacturers, automotive suppliers and even criminological laboratories.

The key to the new flexibility lies in two technical innovations: The software controlled [collimators](#) and the extremely high-performing silicon-drift detector:

- The software collimators make it possible to set the MIDEX measuring point in pre-defined steps from 200 micrometers to 4 millimeters. Depending on the size chosen, the instrument is suited to exact spot analyses, e.g., the examination of capacitors on printed boards, or to mapping analyses, for which it is possible to examine large surfaces up to a size DIN A5.
- The new silicon-drift detector in the MIDEX counts up to 250,000 signals per second. That makes the MIDEX extremely fast and ensures that it delivers precise analytical results even with 20 millimeters between source and measuring point. Mounted printed boards can even be examined without having to remove the components and inclusions in automotive parts can be located.

The motor driven XYZ sample plate is a further MIDEX highlight. Read more [here](#).

## Turning the Tables



**The SPECTRO MIDEX can be optionally supplied with helium flush to enable fast measurement of the light elements from magnesium to titanium.**

*The [SPECTRO MIDEX](#) was always superb for spot measurements. In order to bring the instrument into top form for mappings, SPECTRO equipped it with a motor driven sample table. In practice, the optional accessory quickly became a best seller. Why do so many customers want this extra? It's quite simple:*

- For mapping analyses, the user just has to place the sample on the table and program the travel

path on the PC. The table then automatically starts to move – and the MIDEX scans the entire sample surface. In this way, for example, it is possible to determine the distribution of the lead content – enabling the detection of “hot spots” with a higher than acceptable content – on a euroboard, a standard size for printed boards, in 30 minutes.

- Just as simple: Automated spot analyses. Again, it is only necessary to set the travel path on the PC. The MIDEX then measures only the programmed spots not the entire area. Ideal, for determining the cadmium content at individual locations on a sample. With a maximum stand-off distance of 20 millimeters to the sample, every spot in the travel area can be brought into optimal focus.
- And, last but not least, the sample table is used in many laboratories as an improvised auto-sampler. The lab technician places several samples on the plate and programs the travel path so that the samples are measured in sequence.

A deeper look into practice can be found [here](#).

## Setting New Standards in RoHS Compliance Screening

*Electronics boards, jewelry, toys or traces of gunpowder: The new [SPECTRO MIDEX](#) convinces in widely varying application areas.*

When asked about the most important uses for the new MIDEX, Product Manager Dirk Wissmann doesn't need long to answer: "[RoHS compliance and lead screening](#). With its strong mapping capability, the MIDEX is ideal for non-destructively scanning entire circuit boards. The optional ability to measure sample topographies with up to 20 millimeter differences will set completely new standards in this area."

For Wissmann, another target for the MIDEX is the jewelry and precious metal industry, for which the MIDEX was originally developed. In this price sensitive market, the MIDEX scores points because the micro analyzer has become even faster in the new generation; saving an enormous amount of time for the examination of jewelry.

Additionally, Wissmann sees the new generation as one to get its foot in the door to new markets: "We can, for example, non-destructively search for inclusions in glass and metal samples. This is an extremely interesting method for automotive and

aerospace industries to monitor compliance with quality regulations."

SPECTRO plans to set its sights on an even more thrilling target market: Criminological laboratories that can analyze, e.g., gun powder traces on skin and clothing with the micro XRF analyzer – enabling them to draw important conclusions.

If you would like to have more information, simply send us an [e-mail](#).





## Analysis Close to the Coast with SPECTRO iQ

Whether the North or Baltic Sea or the English Channel: Habitats close to the coast are being increasingly threatened by sulfur dioxide emissions from the combustion of bunker fuel. For this reason, the [International Maritime Organization](#) has imposed regulations for the use of low sulfur bunker fuel in many regions.

If you want to be sure that your fuel satisfies all criteria, then you are dependent on efficient analytical technology. Our tip: The [SPECTRO iQ](#) XRF spectrometer. This compact laboratory instrument reliably monitors the sulfur content – and even saves money at the same time. Refinery residues, such as aluminum and silicon, can be discovered at an early stage in fuels; making it possible to prevent increased motor wear before it's too late. The quality of your cylinder oil is easily inspected with the SPECTRO iQ; enabling you to avoid expensive maintenance work and long lay days.

Find out more: Send us an [e-mail](#) requesting your copy of our brochure "Analysis of Marine Fuels & Oils, Sulfur, Cat Fines and Condition Monitoring".

Typical mudflats inhabitant: The [oyster catcher](#). This black and white bird with its bright orange-red beak is also at home many miles away from the North Sea coast – even on the flat roof of the SPECTRO headquarters in Kleve. For several years now, an oyster catcher pair returns every spring to raise its chicks in the gravel on the roof. You can barely see the well camouflaged birds up there, but you can hear them! SPECTRO visitors who become too curious are loudly and shrilly kept away. At SPECTRO, protection of the mudflats begins right at our own front door.



## New application reports for XRF and OES

### ***SPECTRO ARCOS***

- ICP-68 Analysis of Steels using ICP-OES with Radial Plasma Observation

### ***SPECTRO XEPOS***

- XRF-48 Analysis of Small Amounts of Powdered Samples
- XRF-49 Analysis of Ferro-Alloys

### ***SPECTRO xSORT***

- XRF-50 Analysis of Soil and Wast
- XRF-51 RoHS Compliance and Lead Screening

### ***SPECTROLAB***

- SMA-22 The Determination of Oxygen in Low Alloy Steel

### ***SPECTROMAXx***

- SMA-10/1 Analysis of Steel and Cast Iron
- SMA-11/1 Analysis of Aluminum and its Alloys
- SMA-12/1 Analysis of Copper and its Alloys
- SMA-15 Analysis of Nickel and its Alloys
- SMA-16 Analysis of Cobalt and its Alloys
- SMA-17 Analysis of Magnesium and its Alloys
- SMA-18 Analysis of Titanium and its Alloys
- SMA-19 Analysis of Lead and its Alloys
- SMA-20 Analysis of Tin and its Alloys
- SMA-21 Analysis of Zinc and its Alloys

***All of the application reports are available at [www.spectro.com](http://www.spectro.com)!***



## Trade Show Calendar: Where you can find us in summer 2009



**30.6.–3.7.,  
Shanghai, China**

### June

- 10th China International Metal & Metallurgy Exhibition, 23.–26.6., Guangzhou, China

### August

- 42nd IUPAC Congress: Chemistry Solutions, 2.–7.8., Glasgow, UK

### September

- 7th Non-ferrous & Special Casting Exhibition 2009, 1.–3.9., Shanghai, China
- Analitica Latin America, 8.–10.9., Sao Paulo, Brazil
- Labsupply, 9.9., Aachen, Germany

**JAIMA SHOW 2009  
2.–4.9., Makuhari, Japan**

### September (continued)

- Metaltech Vietnam, 9.–11.9., Hanoi, Vietnam
- Aluminium of Siberia, 9.–11.9., Krasnojarsk, Russia
- QTI (S&S), 14.–19.9., Essen, Germany
- Australien Foundry Institute Conference & Exhibition, 27.–30.9., Melbourne, Australia
- TRASMET, 29.9.–2.10., Bilbao, Spain

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