

## Press Release

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### **Maximum Performance - minimum footprint**

**Double-beam optical system ensures excellent stability and world class sensitivity/**

**Fully automatic multi-element analysis in flame and graphite furnace mode/**

**Unique safety feature: vibration sensor**

Shimadzu, one of the world leaders in analytical instrumentation, has introduced a new series of atomic absorption spectrophotometers. The high-performance AA-7000 system with double-beam optics covers the fully automatic multi-element analysis in flame and graphite furnace mode. In parallel, Shimadzu has developed the AA-7000F instrument for analysis in flame mode. The AA-7000G features graphite furnace technology.

The AA-7000 series replaces Shimadzu's AA-6300 and AA-6800 family, and covers the entire performance range in the world of atomic absorption spectrophotometers. With a maximum range of performance, the AA-7000 series have a minimum footprint. The whole unit needs just half a square meter of space.

### **Improved technique leads to improved controls**

Today's environmental consciousness and the continuously increasing quality requirements of our daily needs, e.g. drinking water, call for control mechanisms requiring more and more accurate analytical systems. The AA-7000 meets these needs and

combines excellent performance data with the highest level of accuracy for which Shimadzu's AAS systems are best known.

The AA-7000 operates in a wavelength range of 185 to 900 nm and contains a Czerny Turner monochromator with a holographic grating (1800 lines/mm). The high-performance detector is suitable for ultra-trace analysis and consists of a photomultiplier for the 185 to 900 nm wavelength range.

### **Most modern components for flame analysis**

The new AA-7000F is equipped with a titanium burner, a ceramic impact bead, a platinum/iridium capillary and an optimized nebulization chamber which is resistant to all known acids, organic solvents and all reagents commonly used in atomic absorption spectrometry. The high efficiency nebulizer unit as well as the stable optics enable excellent performance data. A mouse click on the "periodic system of the elements" enables the fully automatic setting of all required system parameters.

Shimadzu offers many accessories to increase the functionalities of the AA-7000F system: the GFA-7000 digital graphite furnace, the ASC-7000 sample preparation station and the AAC-7000 automatic atomizer changer. With these devices, the AA-7000F system can also be adapted to carry out fully automated multi-element analysis of up to 20 elements using electrothermal atomization.

### **No interference problems**

Two independent methods for background compensation solve all known interference problems:

- The deuterium method compensates spectral interferences by molecular absorption and particulate-caused scattering
- The high speed self reversal technique guarantees compensation of spectral interferences caused by absorption

line overlapping and structured background in the entire wavelength range from 185 up to 900 nm.

**Unique: vibration sensor** In addition to excellent analytical results, safety is a main factor for the AA-7000. A flame monitor controls the flame during analysis. Shimadzu has equipped the unit with a worldwide unique sensor which extinguishes the flame if a vibration is detected. The fuel gas pipes are checked automatically for leaks when the power is switched on.

The software package with "Wizard" function contains many applications for QA/QC and is compatible with the requirements of 21 CFR Part 11 (electronic records and signatures) and all other FDA regulations. Regular system evaluation is also important when using atomic absorption spectrophotometers as a testing tool. For this purpose a separate validation software function is built in as a standard feature.



Figure 1: AA-7000 with dual atomizer system and ASC-7000 sample preparation station

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