

# **LINSEIS/PFEIFFER (BALZERS) THERMAL BALANCE / MASS SPEC**

Evolved Gas Analysis EGA with TG / MS coupling technique



Linseis Thermal Analysis is introducing a cooperation with Pfeiffer / Balzers company in order to introduce an Evolved Gas Analysis (EGA) system, which consists of a Linseis balance L81 which is coupled with a heated capillary to a Pfeiffer ThermoStar Mass Spectrometer.

Both companies have extensive experience in their special fields which are thermal analysis / mass spectrometer and high vacuum techniques.

The temperature range that can be covered goes from  $-150^{\circ}\text{C}$  up to  $1550^{\circ}\text{C}$  on the balance.

The model L81 is a highly reliable well proven system, which can measure TG and DSC simultaneously. The evolved gases are produced under normal pressure atmosphere (1 bar). They leave the balance room through an open ended protection tube of  $\text{Al}_2\text{O}_3$ .

The evolved gases are introduced into a heated capillary out of quartz, which is extremely fine, in order to produce the necessary high vacuum, when the evolved gases enter the mass spectrometer.

The heated capillary is necessary in order to prevent condensation of the hot gases on cold surfaces.

The Pfeiffer / Balzers Mass Spectrometer consists of a very high sensitive quadrupole mass detector. This detector can be delivered with 3 different mass ranges:

**0-100 amu, 0-200 amu and 0-300 amu.**

The necessary high vacuum is obtained through 2 stages of vacuum pumps that are integrated into a very compact housing. First stage is a rotary pump, second stage is a turbo molecular pump.

Both systems, the Mass Spectrometer and the Thermal Balance are connected to a common PC which uses a PCI card to control the L81 balance and also to control the Mass Spec.

All software is written under Windows and is thus very easy to use.

The obtained measurements and spectra, can be interpreted through a library of existing mass spec files. The measuring results are retrieved simultaneously and can be obtained even during measurement of the system.

Overall the Linseis /Pfeiffer (Balzers) EGA system with coupling technique is a very powerful tool that can be used in many different applications and that delivers information that can otherwise not be achieved if only single measuring techniques are used.

**LINSEIS**