

Tuesday Morning, October 29, 2013

Exhibitor Technology Spotlight

Room: Hall A - Session EW-TuM

Exhibitor Technology Spotlight I

Moderator: C. Moffitt, Kratos Analytical Limited, UK

10:00am **EW-TuM7 Nothing to Fret about Fretting**, *S. Shaffer*, Bruker
Fretting occurs when two materials come in contact with each other under load and are subject to a very low amplitude relative motion, often due to vibration. Usually, the amplitude of the vibration is 50 microns or less. This phenomenon occurs across a wide range of industries, and understanding this wear process, as well as the effectiveness of palliatives is important. In electronic packaging fretting can occur where two contacts mate. In aerospace applications, this process occurs where the turbine vanes dovetail to the rotor disk. In the automotive industry, this can occur in under-the-hood applications like engine mounts. A new UMT drive with a fully programmable stroke length and frequency will be used to demonstrate how materials can be tested to make sure that materials and coatings selected for these types of applications are suitable. The new drive is designed to work in a variety of application-specific environments.

10:20am **EW-TuM8 A New Truly Easy-to-Use Dedicated Infrared Microscope**, *T. Tague, S. Wang*, Bruker

A new stand-alone infrared microscope (Lumos™) has been developed for the rapid analysis of small samples. The new microscope was developed with the intent of providing state-of-the-art microanalysis capabilities with a truly easy-to-use user interface. The visual image quality of the Lumos is excellent so the important first step in the analysis, visualization, is easily accomplished. The Lumos utilizes a unique objective design, where the numerical is low for sample viewing and high for the infrared data collection. This makes it very easy to locate and view the sample without sacrificing infrared performance.

The novel Wizard user interface controls all aspects of the microscope and guides the user through the analysis process. The sample stage, sample focus assembly, condenser, aperture, polarizers, and ATR mode are controlled in the software providing true "point and shoot operation". ATR microanalysis is accomplished by simply clicking on the area of interest in the software to center it and selecting ATR. Area reflection, transmission, and ATR images are collected by simply drawing the desired analysis and starting the desired acquisition. The image processing software interface provides research quality analysis tools with an intuitive interface.

The Lumos also has a unique ability to readily analyze samples with traditional sampling accessories. A port is provided to attach accessory modules from Bruker's Alpha FTIR Series. Standard ATR, transmission, reflection, and even gas cell analysis can be readily conducted with the Lumos. Lastly, the Lumos comes with a comprehensive validation package to support any range of validation requirements.

Authors Index

Bold page numbers indicate the presenter

— **S** —

Shaffer, S.: EW-TuM7, **1**

— **T** —

Tague, T.: EW-TuM8, **1**

— **W** —

Wang, S.: EW-TuM8, **1**