

# Tuesday Morning, November 14, 2006

## Exhibitor Workshop

### Room Exhibit Hall - Session EW-TuB

## Exhibitor Workshop

Moderator: R.A. Childs, MIT

10:00am **EW-TuB1 Biomaterial Characterization and Problem Solving with Surface and Microanalytical Techniques**, *I. Mowat*, Evans Analytical Group  
Surface and microanalysis techniques have a wide range of applications for biomaterials. In research and development, understanding surface chemistry can help to shorten development cycles & provide ways to compare the effectiveness of new materials early in the process. This can make it possible to bring products to market more quickly. In production, analysis techniques are valuable tools for quality assurance and quality control processes. In both R&D and production, as well as in dealing with returned or faulty product, failure analysis techniques can provide essential information to better understand what went wrong. Examples of how various surface analysis techniques can be used to address these areas will be covered in this talk.

10:20am **EW-TuB2 Novel Mass Spectrometer Design with Intuitive User Interface for Helium Leak Detection**, *J.D. Geist*, Varian Vacuum Technologies Inc., US; *P. Williams*, Arizona State University; *S.J. Yamartino*, *J.H. Diep*, Varian Vacuum Technologies Inc.

Mass spectrometers tuned to detect the lighter gasses have been used for many years to quantify leaks in various materials and joints. As the technology advanced, so did the desire to detect smaller leaks ( $<1 \times 10^{-11}$  @ Atm-cc/Sec). Efficient, contamination-free ion production and the ability to measure smaller ion current are key elements in the successful detection of smaller leaks. Through the use of selective ionization, the ion stream would contain a mix of ions that could effectively be discerned by the magnetic sector. By precisely shaping and positioning the electrodes in the ion source to maximize the ion beam cross section in the gap, the number of detected ions would be maximized. A novel approach to spectrometer design including an efficient, contamination-rejecting hot filament ion source, novel ion optical design and robust ion detection without the use of an electron multiplier will be presented. Mass spectrometers are often used by operators who have minimal training and who are not experts in leak detection. Many instruments overwhelm the users with an array of buttons, lights and user information. A new paradigm in the user interface experience now provides the user with the necessary functions while allowing access to the more advanced functions via a color touch screen. This touch screen interface has incorporated graphical functions that allow the brain to process the information faster than if the information was in written text. Additionally, since all information is embedded into the screen, functions that could not be provided using "hard buttons" are possible while providing a truly global model supporting multiple languages including English, French, Spanish, German, Chinese, Japanese and Korean.

## Author Index

**Bold page numbers indicate presenter**

— D —

Diep, J.H.: EW-TuB2, **1**

— G —

Geist, J.D.: EW-TuB2, **1**

— M —

Mowat, I.: EW-TuB1, **1**

— W —

Williams, P.: EW-TuB2, **1**

— Y —

Yamartino, S.J.: EW-TuB2, **1**