

# Wednesday Lunch, October 21, 2015

## Exhibitor Technology Spotlight

Room: Hall 1 - Session EW-WeL

## Exhibitor Technology Spotlight Session

Moderator: Dennis Sollon, Kurt J. Lesker

### 12:40pm EW-WeL2 Wet Cell II for Analysis at the Liquid Vacuum Interface, *Junhang Luo*, SPI Supplies

The liquid interfaces are very active and important for environmental, biological, and industrial processes. However, most surface analysis instrument are vacuum based and the rapid liquid evaporation makes in-situ analyzing liquid surface extreme challenge. Wet Cell II offers a simple solution for scientists and researchers to directly analysis of liquids at the molecular level in a vacuum environment with minor cost. As a lab-on-a-chip device, Wet Cell II can be straightforwardly adaptable to many different analytical platforms, including scanning electron microscopy (SEM) and time-of-flight secondary ion mass spectrometry (TOF-SIMS). Wet Cell II requires little or no sample preparation and only consumes a few drops of liquid. Typical applications include microbiology, liquid surface chemistry, drug delivery & reaction, and energy storage, etc.

### 1:00pm EW-WeL3 Relative Permeation Performance of O-ring Seals Using DuPont Test Methodology, *Mark Heller*, DuPont™ Kalrez®

As Large Scale Integration (LSI) Devices become more advanced, feature sizes are continuing to get smaller and the associated film thicknesses deposited are reaching atomic levels. As a result, the outgassing and permeation characteristics of elastomeric seal materials used in high temperature and high vacuum processes are important factors that can influence film uniformity, quality and consistency. DuPont Performance Polymers (DPP) has developed a practical test methodology for comparing relative permeability characteristics of O-ring seals under high vacuum conditions using a Quadrupole Mass Analyzer (QMA) and Ionization Vacuum Gauges. The method will be discussed and a sampling of data generated for various O-ring materials / compositions will be reviewed.

### 1:20pm EW-WeL4 Advances in Bellows Electroforming, *Berl Stein*, NiCoForm

Improved mechanical properties of NiCoForm's nickel-based alloy, NiColoy®, broaden the appeal of electroformed bellows. Newer manufacturing techniques shorten lead times and reduce cost of custom, as well as standard bellows. Proprietary electrojoining, corrosion protection and multi-ply technologies deliver industry-leading performance in net-shape electroformed, ready-to-use components.

### 1:40pm EW-WeL5 PREVAC's Solutions for Helium Temperature Sample Manipulation and Related Sample Transferring Systems, *Adam Dziwoki*, PREVAC sp. z o.o., Poland

The wide range of temperatures is the key point for number of analytical techniques. We are able to cool down and stabilise the temperature of the sample in 5-6 axes manipulators below 10K. Our latest upgrade in helium manipulator is the possibility of the sample heating and extension of the tilt range implemented without any impact on continuous rotation. If you need a solution for fast and reliable transfer between several chambers in UHV conditions we invite you to check in person a manual or motorised solutions for Radial Distribution Chamber. Thanks to it the spectroscopy, deposition and microscopy chambers with all auxiliary chambers can be connected together.

### 2:00pm EW-WeL6 Variations on Vacuum Baking for MEMS Processing, *William Moffatt*, *K. Sautter*, Yield Engineering Systems, Inc.

Yield Engineering Systems' latest series of ovens are essential tools for Semiconductor, MEMS and Wafer-level packaging (WLP) processes. The full presentation will explain the technical process involved for each tool in the YES-VertaSeries: The YES-VertaCure automated, high temperature cure series of ovens helps achieve total environmental control to increase yields and extend device performance.

Applications

- Polyimide cure
- BCB cure
- Low temp polymers cure
- Copper anneal

The YES-VertaCoat automated, silane vapor deposition system is designed for today's most advanced MEMS and semiconductor process applications. Whether it's precise surface modification to reduce stiction for MEMS devices or a thin copper diffusion barrier layer in an advanced semiconductor device, the capability to use a large number of different organosilanes provides the ability for precise surface modification.

Applications

- Wafer dehydration
- Surface tension modification
- Copper diffusion barrier

The YES-VertaVac series of automated high vacuum ovens ensures moisture and hydrogen removal using high vacuum (10<sup>-5</sup>) and high temperature (up to 450°C). Our patented nitrogen purge precedes process ramp and creates a successful procedure for improved MEMS lifetime and performance.

Applications:

- Wafer dehydration
- Getter activation
- Metal annealing

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