

Plasma Applications Group

- Instrumentation & Metrology for Plasma Processing,
- Chaired by:
 - **Paul Werbaneth, at Tegal**
 - pwerbane@tegal.com
 - **Didier Florin, at EmbeddedMetrology.com**
 - info@embeddedmetrology.com

Agenda

- **2:00 House keeping (10 min)**
- **2:10 Application notes for OERS technology**
- **2:35 Guideline for selecting an appropriate detector**
- **3:00 Plasma clean impedance endpoint detection**
- **3:25 Break (20 min)**
- **3:45 Electrical non-contact characterization of plasma damage**
- **4:10 MIR absorption spectroscopy for plasma monitoring**
- **4:35 Remote plasma sensor opens a brand new frontier for OES**
- **5:00 Wrap up; rush hour time !**

Housekeeping

- **Mission Statement / Why PAG**
- **Sponsors**
- **Pass the word**
- **Sign up sheet: Name, Company, Email**
- **Next meeting:**
 - October 8 (watch for the “early” date!)
 - **SURFACE MODIFICATION**
 - Lucia Feng (lmfeng@earthlink.net)
 - Paul Werbaneth (pwerbane@tegal.com)
- **Thank you to Semi**

Application Notes for OERS

- **Stephen Daniels is a lecturer at the Dublin City University (semi conductor industry), and CTO at Lexas Research, IRL.**
- **Didier Florin holds a post MS degree (DEA) in Instrumentation/Automation Engineering.**
- **He worked for SOFIE Instruments (88-94), then Verity Instruments (94-06), and last AMAT (06-09) as a MTS (Etch BU).**
- **He investigated new, disruptive, process centric (optical / RF) sensor technologies for process tuning and control, as well as chamber matching.**

Guidelines for detector selection

- **Mario Kasahara, Applications Engineer, has been with Hamamatsu for 15years.**
- **He has extensive experience in photo-detectors.**
- **He served as PMT and Image sensor specialist;**
- **He is currently Hamamatsu custom solid state detector and photoIC specialist.**

Impedance Endpoint Detection

- **Terry Turner, the President and founder of Forth-Rite Technologies, LLC has been a pioneer in the design, development, deployment and application of point of use RF measurement technology since 1987.**
- **Mr. Turner's career began at Texas Instruments, after receiving a BSEE and MSEE from Tennessee Technological University in 1983.**
- **As a TI assignee to SEMATECH he was the Program Manager for an investigation into the application of various diagnostic devices targeted at improvement of plasma process control.**
- **In 1991, SEMATECH approved Mr. Turner leaving and founding Fourth State Technology (FST) as a spin off to provide in situ RF measurement technology to the semiconductor industry. Subsequently, FST was acquired by Advanced Energy Industries in 1998 where Mr. Turner served as VP Instrumentation Division till 2001.**
- **In 2005, Mr. Turner founded Forth-Rite Technologies, LLC with the specific focus of providing unique RF measurement technology to the semiconductor industry.**
- **Mr. Turner holds 8 US patents with 4 US and 4 foreign applications currently pending in the areas of RF sensor design and application, plasma confinement and plasma diagnostics.**

BREAK TIME !

- Restrooms are on the other side of the door at the back of the room
- We resume at 3:45
- Do not forget to sign the attendance sheet

Electrical, non-contact, characterization of plasma damage

- Laurent Kitzinger holds an MS degree in semiconductor physics from ENSICAEN.
- He joined SOPRA, a French manufacturer of spectroscopic ellipsometers, 7 years ago as an application engineer in the bay area, and was leading its US subsidiary until its recent acquisition by Semilab.
- He was named Semilab Western area sales manager 2 months ago.

MIR absorption spectroscopy system for plasma monitoring

- **Randall Wilcox is President of Lightspeed Technologies Inc (Campbell, CA).**
- **After working for 10 years in R&D at NASA Ames Research Center in areas, including cryogenics, infrared detector characterization and wind tunnel instrumentation, he entered the private sector as a Sales Engineer in test and measurement equipment.**
- **This experience quickly converged onto sales and project management of laser technology including laser lamps, ultrafast oscillators and amplifiers, and diode lasers.**
- **In 2005 he formed Lightspeed Technologies, providing solutions in laser and LED based illumination systems, spectroscopy, and optical metrology.**

A remote plasma sensor that opens new frontier to OES

- **Chuck Borowski**
- **"Pivotal Systems is a Silicon Valley start-up company that has created some very innovative technology that provides new in situ measurement capabilities.**
- **We will hear about one of these products today along with some sample use cases."**

Wrap-up

- Again, thank you to Semi
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