Advanced Materials/Failure Analysis (AMFA) Workshop

April 20, 2007 • Hyatt Regency Hotel • Phoenix, Arizona

AMFA MISSION:

To serve the interests of failure analysis & materials characterization professionals by providing a forum for the presentation and ***active*** *discussion of timely and pertinent technological issues and trends and to promote the development of new capabilities that fill critical gaps in emerging technologies.*

Unlike traditional conferences that often restrict audience participation, AMFA Workshops provide only top quality invited speakers on leading edge topics, in a format where audience participation is expected and strongly encouraged.

Program

• *Leveraging Federal Funding for Characterization Tools*…………………………Bruce Gnade, University of Texas, Dallas

This presentation will address funding schemes to develop sophisticated, small volume analytical tools for the semiconductor industry. History has shown us that development cycles of 5-7 yrs and millions of dollars of non-refundable engineering costs are typical. The problem is exacerbated by small world wide sales and the fact that typically the tools are being developed by small, venture capital firms whose budgets are strained. The presentation will include an introduction based on the actual development costs and resources necessary to bring x-ray tomography to the marketplace and the path forward to avoid some of the obvious limitations of that process.

•*"FA Role: Dynamic Driver or Passive Passenger?"*..Rich Blish, Spansion; Efrat Raz, Gemtech

The FA team does not take an active role in technology roadmaps, design reviews, production assessment and post analysis recovery plans and with a limited budget it is expected to continue to support advanced technology and production cost cutting - crying silently in our beer won't change anything! We must demand to become a *technical* partner by developing interactive communication; demanding data and being a follow up partner. The FA manager must be a *business* manager, who markets his/her products aggressively. Success must be communicated both technically and in dollar terms - "top management language".

•*"FA Role: Dynamic Driver or Passive Passenger?"*………………………….Breakout Discussion

Metrology for Emerging Devices and Materials ………Eric Vogel, University of Texas, Dallas
Scaling of the Metal Oxide Semiconductor Field Effect Transistor (MOSFET) and its traditional materials has been the basis of the semiconductor industry for nearly 30 years. A wide variety of materials and devices are emerging to extend and replace the traditional MOSFET. This talk will provide an overview of these emerging devices and materials and of the metrology requirements for these technologies

Atomic Level Ion Source Microscopy. ....Bill Ward, ALIS Corp.
A novel helium ion microscope has been developed which has advantages over traditional scanning electron microscopes(SEMs) and focused ion beams (FIBs) for many applications. The ALIS scanning ion microscope uses a beam of helium ions as the imaging particles. Ions can be focused into a smaller probe size - less than 1 nm with a properly designed column, and have less sample interaction than electrons. The ALIS microscope can generate higher resolution images with more material contrast so more detail can be seen. We expect to be able to see things much smaller than we've ever been able to see with even the most sophisticated scanning electron microscope (SEM).

Materials Characterization Using Ultrafast Lasers………..David Cahill, University of Illinois
This presentation describes how the rapid heating of the near surface of metal films by nJ ultrafast optical pulses can be used to generate nanoscale wavelength strain and temperature fields for measurements of the mechanical and thermal properties of thin films and interfaces.

Failure Analysis Year In Review………………Christian Boit, Berlin University of Technology
FA innovation trends are measured by IC technology roadmaps. This presentation takes snapshots of the year and introduces major trends. A picture of the dynamics in the different analysis sections metrology, debug/diagnosis on die and package and their respective interactive potential emerges that also anticipates economical aspects of the development.

Registration Fees: $150.00 for IEEE or EDFAS members, $200.00 for non-members. Registration may be done online at www.amfaworkshop.org (after Jan. 01), onsite during IRPS, or at the AMFA Workshop. Registration for the AMFA Workshop includes a CD-ROM of the presented materials, lunch, and morning/afternoon breaks.

The AMFA Workshop is technically co-sponsored by the IEEE Reliability Society and the Electronic Device Failure Analysis Society.

For general workshop information, visit http://www.amfaworkshop.org/ or contact:

Gay Samuelson
Workshop Chair, AMFA
Technical Consultant
Tel: (480) 707-2083
Email: g.m.samuelson@att.net

For registration and mailings
IRPS Publishing Services
P.O. Box 308
Westmoreland, NY 13490 USA
Tel: (315) 339-3968
Fax: (315) 336-9134
e-mail: pub_services@irps.org