

Call for Papers

Semiconductor Technology Programs

19-21 October, Dresden, Germany
In conjunction with SEMICON Europa 2010

Continuing in its tradition of providing a focus on practical solutions in the front-end manufacturing environment, SEMI (Semiconductor Equipment and Materials International) invites technical experts to submit abstracts for the Semiconductor Technology Programs related sessions

Part of the Technical Programs will be held in conference rooms (paid sessions). All other sessions will be at the SEMICON TechARENA, an 80 seat open-theater located directly in the exhibition hall, for free attendance, all visitors. The programs organized at the TechARENA are composed of an invited speaker session, followed by company presentations of SEMICON Europa exhibitors/sponsors.

The topics addressed are:

LITHOGRAPHY

- The imaging capability of sub-wavelength optical lithography is being driven beyond past predictions.

How much further can we go, in current manufacturing, economically?

- Much different challenges need to be taken on to enable Si-based advanced μ -System integration solutions.

What are the most promising patterning techniques, related masks, and materials solutions, for cost efficient prototyping through to volume production?

In addition to traditional lithography and patterning themes, we welcome exciting technology themes such as extensions of current semiconductor manufacturing lithography printing through to 3D (high aspect ratio) litho/etch challenges.

MATERIALS

- New applications development and related new process technologies are highly dependent on the development of novel materials.
- Integration of new materials into new device production technologies is a real challenge and high on the agenda of product and manufacturing engineering.

What applications fields are being enabled and advanced by new materials?
(High Temperature devices // High Voltage/Current technologies // High Speed/Low Power devices // Solid State Lighting // Micro Batteries// etc).

Which new process features are being developed for which potential use?
(ALD films // new storage cells // conformity layers // nano wire interconnect // etc)

Where do we stand with the development of new functional materials, and where do we see successful transitions from research into volume production?

SECONDARY EQUIPMENT & SERVICES

- Existing Fabs must be very successfully managed for reliable tool/process function, for overall operations efficiency and capacity management.

How to assure competitive tool availability levels, cost efficient tools maintenance with secure spares supply, tool-plan re-balancing and leveraged use of pre-owned tools -in quality-, etc?

- Extended use of assets strategies must succeed; an essential prerequisite for the still strong European SC Manufacturing base to remain in business.

How to successfully have production tooling to remain in use far beyond initial use cycle at "equivalent-to-new- and- better" performance levels"?

- Furthermore, FAB Technology Capabilities need to be advanced so production will remain "fit for purpose" to match technical needs of upcoming new applications, in new markets developing.

What are the key success factors for introduction of tool advancements and new process functions, novel processes and materials?

Which viable strategies exist for subsequent automation upgrades of manufacturing controls and handling automation?

How to take on the challenges from equipment re-purposing into other technology application fields, e.g. MEMS, Micro Systems integration technologies, etc?

How can successful FAB Teams most efficiently enhance, retrofit, adopt & re-assign, or re-furbish and best re-use assets, and, which services provide viable life-cycle management elements?

450MM UPDATE

- Focused, precursing research work is needed to evaluate some critical equipment and tooling hurdles in 450mm development. Early R&D work is looking at some basic issues in large wafer process physics, handling and related characterization.

Where do we stand with work related to process scaling? Which tool and line instrumentation, which metrology areas are being addressed; and, what progress was made to study the technology bottlenecks towards the needed solutions?

METROLOGY

- Advanced metrology remain on top of the agenda of FAB engineering for successful management of technical productivity.

What progress is being made for new metrology, instrumentation and control techniques, so crucial for enhanced critical dimensions control, defect detection and analysis for successful yield management with automated controls?

Which new modeling methods and root cause defect / failure analysis techniques support the further development towards ultimate productivity learning?

MARKET BRIEFING

- The annual SEMI Market Briefing provides reliable and timely market information, forecasts and expert analysis to help you industry players in their business planning.

SEMI welcomes proposals on regional/worldwide market outlook, capital equipment and materials markets, for semiconductor and related technologies including photovoltaic, plastic electronics, MEMS systems, etc...

FAB MANAGERS FORUM (FMF)

- The direct engagement of fab managers and their teams in this conference has helped the pan-European communications and made the FMF a respected meeting venue for fab executives and professionals from the semiconductor industry to meet and discuss topics which are essential for the drive towards "Total Productivity".
- Extended use of assets strategies must succeed with manufacturing tooling utilized far beyond initial use cycle. Furthermore, fabs technology capabilities need to be kept "fit for purpose" in synch with new market developments.

How can successful fab teams most efficiently enhance, retrofit, adopt & re-assign, or re-furbish and best re-use assets?

Which professional services provide foundations for viable life-cycle management schemes?

- The push for most efficient manufacturing operations remains very strong.

How can the manufacturing experts line up their control-automation concepts so they will match the future manufacturing lines "total productivity" needs?

SEMI welcomes papers of exceptional high technical merit that help Fab management teams to share learning and stay on top of key developments in best-of-breed production and technology management techniques.

See separate call for papers for:

- [ADVANCED PACKAGING](#)
- [TEST](#)
- [MEMS/MST](#)

To submit an ABSTRACT, please provide the following information by e-mail:

- **Presentation Title**
- Specify which **Topic** your presentation addresses
- **Descriptive Paragraph / Abstract**
(200-400 words, clearly identifying the technology issue addressed and solutions)
- **Short Biography** of the author
- **Author's Contact Details**
(Job title, company, address, telephone and e-mail)
- Contact person details i.e. Personal Assistant
(Job title, company, address, telephone and e-mail)

In the subject box of you e-mail, please indicate:

'Semiconductor Technology Call for Papers', and, the **Session** you make a proposal for.

Please submit ALL the above information in one e-mail by 30 April 2010 to europrograms@semi.org

Your presentation will not be included in the review process unless the information is complete and provided in time.

Evaluation criteria include significance, usefulness for the manufacturing world and clarity and accuracy as a paper. Abstracts will be peer-reviewed. We encourage operational case studies and application related presentations, i.e. on joint projects between users and suppliers. Papers are to be non-commercial and focus on the technical/economical merits of a process rather than the individual company's product benefits.

Selected presenters will be notified by 28 May 2010.

Semiconductor Technology Programs Committee

Mart Graef, TU Delft (chairman); Francis Taroni, Altis Semiconductors; Karsten Schneider, Applied Materials; Ivo Raaijmakers, ASM International; Didier Louis, CEA-Leti; Lothar Pfitzner, Fraunhofer IISB; Richard Oechsner, Fraunhofer IISB; Guy Dubois, GDCL; Martin Heerschop, GE Capital; Roger de Keersmaecker, IMEC; Wolfgang Arden, (Infineon); Martin McCallum, Nikon Precision Europe; Livio Baldi, Numonyx; Michael Arnold, PEER Group; Bruno Ghyselen, Soitec; Alain Brochet, STMicroelectronics; Johann Bartha, Technical University Dresden; Peter Schäffler, Texas Instruments; Jacques Berg, Tokyo Electron; Tom Beens, Umicore.

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