



ASMC 2012 – Second Call for Papers

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Abstract Deadline—November 11, 2011

Semiconductor Equipment and Materials International (SEMI), IEEE Electron Devices Society (EDS), and IEEE Components, Packaging, and Manufacturing Technology Society (CPMT) invite microelectronic professionals at all levels of experience from around the world to submit abstracts for SEMI Advanced Semiconductor Manufacturing Conference 2012.

ASMC continues to be one of the leading international technical conferences for discussing solutions that improve the collective manufacturing expertise of the semiconductor industry. Solving the challenges presented by semiconductor manufacturing has been a combined effort by device makers, equipment and materials suppliers and academics. ASMC provides an unparalleled platform for semiconductor professionals to network and learn the latest in the practical application of advanced manufacturing strategies and methodologies. The conference is now soliciting abstracts from professionals involved in all areas of semiconductor manufacturing on 16 topic areas. Selected papers may be considered for the IEEE Transactions on Semiconductor Manufacturing special section.

Author Instructions

Papers co-authored by a device manufacturer, equipment or materials supplier, and/or academia that demonstrate innovative, practical solutions for advancing semiconductor manufacturing are highly encouraged. Original, non-commercial and non-published works are being solicited in specific categories. Peer-reviewed papers are selected based on a clear outline of problem, analysis, solution/results and conclusion. Authors are requested to provide an extended abstract of no more than one page of text (max. of 1000 words, MS Word or PDF) with an additional page including supporting data and figures. Please summarize the topic and theme in as much detail as allowed by the word count limitation. Include title, author(s), company affiliation(s), contact information, topic and five key words describing the work. For templates and further instructions, visit our web site: www.semi.org/asmc2012.

Awards

ASMC 2012 Entegris Best Paper Award

All papers presented at ASMC will be considered for the ASMC 2012 Entegris Best Paper Award

ASMC 2012 GLOBALFOUNDRIES Outstanding Student Paper

Papers authored by a student or student/professor will receive special consideration for the 2012 ASMC Outstanding Student Paper competition, sponsored by GLOBALFOUNDRIES. Students wishing to be considered for this award should so note in their abstract submission.

Important Dates *(subject to change)*

- **Abstracts Due:** November 11, 2011
- **Author Notification:** December 16, 2011
- **Preliminary Manuscripts Due:** March 7, 2012
- **Final Manuscripts Due:** April 25, 2012
- **Presentations Due:** May 7, 2012
- **Conference Dates:** May 15-17, 2012

Advanced Semiconductor Manufacturing Conference—ASMC 2012

May 15-17, 2012 – Saratoga Springs, New York

ASMC 2012 Topic Areas

AM: Advanced Metrology—New metrology techniques and methods; *in-situ* monitoring methods; metrology in process control; measuring critical dimensions; overlay; metrology of new materials; thin film materials.

AEM: Advanced Equipment and Materials Processes—Development of new front- and back-end processes; characterization and integration of barrier layers, advanced gates, high-k and low-k, isolators, optical and conducting materials; evaluation of novel substrates; methodologies for driving new materials from R&D to mass production.

AP/DFM: Advanced Patterning / Design for Manufacturability — Immersion, double patterning, and EUV lithography; advanced resolution enhancement techniques; source/mask optimization; alignment and overlay enhancement solutions; advanced reticles; alternative patterning methods; high versus low volume manufacturing effect on lithography process; computational lithography; process model and process model file; optical proximity correction and verification; design rules creation and verification; DFM in support of yield learning through product cycle; use of test structures for design rule and process window validation; early manufacturing involvement; integrated product and process development (IPPD).

APC: Advanced Process Control—Advanced control techniques such as run-to-run control; model-based control; non-linear control methods; application of advanced statistical methods to control; advanced SPC techniques; fault detection and classification (FDC).

CFM: Contamination Free Manufacturing—Backside contamination; EUV lithography cleanliness; ultraclean technologies; materials; control of mini-environments; environmental factors; wafer and reticle carriers/transport; static charge control.

DM: Data Management and Data Mining Tools—Fab and test floor data collection methods; data format, volume and interface challenges; fast drill-down to problem tools and sources; foundry-to-fabless data transfers and information issues; new visualization methods for improved data understanding; applying data mining techniques to isolate critical information from large data volumes.

DI: Defect Inspection and Reduction—New brightfield, darkfield, e-beam and other techniques and technologies for cost-effective yield control; process development using defect detection and management; new methodologies for detection, characterization, classification and disposition of defect counts, types and distributions; diagnostic techniques to correlate in-line inspection results to product yield.

ET/ ID: Enabling Technologies and Innovative Devices—MEMS, magnetic heads, micro displays, motion sensors, DLP, MRAM, organic semiconductors, silicon modulators, photonic devices, 3D gates or novel structures; biosensors; semiconductor photovoltaic challenges; new process technologies; CMP developments; novel and emerging applications of existing process techniques.

ER: Equipment Reliability and Productivity Enhancements—Efficiency/productivity measurements; optimizing and extending fab productivity within the framework of existing wafer sizes (200 mm, 300 mm); cycle time reduction; cost reduction; best practices; customer-supplier continuous improvement programs; high mix/high-volume factories with high-equipment productivity; small-lot manufacturing and single-wafer/mini batch tools; fab conversions; integration of factory control systems into the complete supply chain; enhancements in 200 mm factories and 200 mm manufacturing.

FA: Factory Automation—Automation in fab, probe, assembly and test factories; e-diagnostics; e-manufacturing; WIP management; scheduling; planning; logistics; modeling; productivity; supply chain management; manufacturing performance; capacity, metrics, supply/demand management; deployment, cycle time and time-to-market; fully automated factory and remote operation center equipment and equipment interfaces; data collection interfaces; automated material handling systems (AMHS) challenges and carriers; standards and standardization.

GF: Green Factory—the role of environment; health and safety; emissions and effluents control; energy saving; recycling; safety and health; community involvement; ergonomics; zero emission; global environment protection; waste reduction; sustainability.

IE: Industrial Engineering—Facilities design and layout; equipment design and AMHS interactions; manufacturing systems design; statistics/quality; computer modeling; simulation; systems management; human factors in engineering; financial decision making; cost reduction

LM: Lean Manufacturing—Establishing flow, standardization, value stream mapping, kaizen, kaikaku, cycle times, WIP, 5S, continuous improvement; metrics, waste reduction.

3D/TSV: Packaging and Through Silicon Via —3D integration in general and associated topics like wire bonding, flip chip bonding (bump metallization), through wafer vias; C₄NP, through vias, silicon carrier; Novel approaches to global/local interconnect issue, power delivery and thermal management.

YE: Yield Enhancement/Learning—Yield analysis tools and methods, including identifying root cause of yield loss and reliability fails; failure analysis; defect-to-yield correlation; zonal and spatial pattern analysis; slot signature analysis; use of volume diagnostics for pinpointing net failures; determination of critical particle size and types.

YM: Yield Methodologies—Yield monitoring and modeling accuracy; model types; critical area extraction techniques; yield-targeted data mining; modeling of systematic and parametric yield; process sector analysis; short-flow yield programs.

For additional information, visit www.semi.org/asmc2012 or email mkindling@semi.org.