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Call for Papers

Materials Conference 2017

Connected World:
new material challenges and solutions

14-15 November 2017 / Munich Germany
Co-located with productronica

The Material conference brings together key players from the semiconductor industry ecosystem to share insights on the latest developments in advanced materials. The conference will delve into what's driving demand for new materials and packaging and discuss how suppliers and chip manufacturer are responding to problems driven by application requirements.
This year's edition will focus on emerging materials, such as FD-SOI and ferroelectric memories, as well integration trends across the entire microelectronics supply chain to meet application requirements particular in the area of automotive and mobile communication. The presentations will show latest innovations and provide an insider's outlook.

The automotive segment represents the most stringent industry when it comes to reliability of semiconductor products. With the recent development of power train control and safety control, electronic control unit (ECU) is required to work in highly intelligent operation (state monitor, power management, etc.) with high stability and reliability, even under high temperature environment like engine compartment. Advanced process technology is imperative to achieve high densities that are necessary for semiconductors to meet these conditions. Ferroelectric hafnium oxide and the derived FeFET memory as well latest FD-SOI technology have already been demonstrated to show high temperature stability.

In the world of mobile communication and the internet of things (IoT) more and more end products will require the use of silicon chips like microcontrollers. In next-generation of communication devices, further advances in speed to ultra-high-speed data transmission using ultra high frequencies will become possible, and linking with other digital devices and the offering of never-before-available high quality new services are expected, too. For ultra-high frequencies, the occurrence of parasitic capacitance plays a major challenge. Further, the chips have to fulfill stringent manufacturing cost requirements since they must not significantly affect the overall Average Selling Price (ASP) of the end product. Moreover, due to the fact that a certain spectrum of IoT products, in particular for narrow band IoT applications, often have limited access to power supply, memory and processing unit - these products have to be very energy efficient. All of these requirements are perfectly matching with FDSOI and FeFET technology and accordingly it represents ideal components for the age of IoT.

More technical details and discussion opportunities will be given during this year's conference.

Papers should cover topics relevant to:

Material capabilities • Technology roadmaps • FDSOI substrates and substrate treatments • FDSOI technology • FDSOI back-biasing • ferroelectric hafnium oxide technology ○ endurance strategies for hafnium oxide based FeFET	**Process capabilities** • FDSOI 22nm & 12nm • FDSOI design & libraries • FDSOI Metrology and inspection methods • material for overmolding • material for interposer • material for wafer level packaging
Material versus application requirements • End-User Requirements & Customer Perspectives • automotive high reliability, Grade 0-2 • frequencies about 300 GHz, 5G capability • low power consumption	**Integration** • Integration Strategies • Pilot Case Studies • Heterogeneous integration • Antenna integration and FDSOI processor • Memory integration and FDSOI processor ○ FeFET Memory and FDSOI
Reliability • The role of material, and material development for higher reliability; • CTE match for heterogeneous integration • Quality and reliability assurance • Failure modes and analysis	**Standards** • Nomenclature • Metrology • Design and Modeling Software • Materials & Substrates • Safety, Accuracy

Instructions to submit an abstract – To submit your abstract please click here.

General guidelines:

- Please submit your abstracts, biography and a photo via internet until **28 April 2017**. Abstracts submitted via fax, e-mail, post, or other methods will generally not be accepted.
- The conference language is English.
- The abstract should have between 400 and 500 words (not more than 2000 characters), starting with descriptive paragraph identifying issue addressed and the solution. Please focus on the news instead of describing state-of-the-art.
- Abstract modifications, changes and corrections will be accepted until the 28 April 2017.

Your presentation may not be included in the review process unless the information is complete.

Evaluation criteria include significance, usefulness for the manufacturing world and clarity and accuracy as a paper. Abstracts will be peer-reviewed and selected relative to the points above. We encourage 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.

Deadline:	**Submit your abstracts and biography until 28 April 2017.**
Changes:	After your first registration your data are saved and can be modified until **28 April 2017**.
Notification:	**Selected presenters will be notified by 17 July 2017.**

SEMI Europe Material Conference Committee:

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