

# THE CONFERENCE

The semiconductor industry faces significant challenges to continue increasing performance and functionality of information processing. New and improved metrology and characterization is required to support these advances in density and functionality. We bring together scientists and engineers interested in all aspects of the characterization technology needed for nanoelectronic materials and device research, development, and manufacturing. All approaches are welcome: chemical, physical, electrical, magnetic, optical, in-situ, and real-time control and monitoring. The conference summarizes major issues and provides critical reviews of important semiconductor techniques needed as the semiconductor industry moves to silicon nanoelectronics and beyond.

The conference will consist of formal invited presentations sessions and poster sessions for contributed papers. The poster papers will cover new developments in characterization and metrology especially at the nanoscale.

## Committee Members

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Toshihiko Kanayama, AIST

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# CALL FOR PAPERS!



## 2015 INTERNATIONAL CONFERENCE ON FRONTIERS OF CHARACTERIZATION AND METROLOGY FOR NANOELECTRONICS (FCMN)

APRIL 14-16, 2015  
HILTON DRESDEN DOWNTOWN  
DRESDEN, GERMANY

[www.nist.gov/pml/div683/conference/](http://www.nist.gov/pml/div683/conference/)

2015 FCMN

[www.nist.gov/pml/div683/conference/](http://www.nist.gov/pml/div683/conference/)



## CALL FOR PAPERS

Papers are solicited to address materials and device characterization and metrology for:

450 mm; 3D IC Analysis / Metrology; III-V on Si for Advanced CMOS; Alternative Gate Dielectrics; Breakthroughs in Electron Microscopy; Breakthroughs in Lithography; Channel Engineering (e.g., strained silicon, 3/5s); Characterization of Nanoscale Sensors and Devices for Health, Environment Monitoring; CMOS, Extreme CMOS, Beyond CMOS; Contamination, Detection, and Identification; Critical Analytical Techniques; Defectivity for epi in FAB; Defects; Device Manufacturing; Diagnostics; Embedded or Buried Interfaces; Flexible (Si-based) Microelectronics; Graphene and 2D Materials and Devices (including topological insulators); Heterogeneous Integration; Hybrid Structures (inorganic islands in flexible organic substrates); In-Situ, Real-Time Control and Monitoring; Integrated Metrology; Interconnects (Present or Future); Internet of Things; Lab-on-a-Chip; Magnetics; MEMS/NEMS Metrology Applications; Modeling/Simulation; Modeling and Simulation of Spectroscopic Properties for Novel Materials for Nanoelectronics; More than Moore; Nanoelectronics Materials and Devices; Nanoscale Electrical Measurements; Nanoscale Optical Measurements; Non-Destructive Atomic Scale Methods; Novel Measurement Methods, Breakthroughs; Organic Electronics; Physical and Electrical Reliability Studies of Nanoscale Manufacturing, Exploratory Devices, Advanced Packaging, etc.; Power Microelectronics (GaN and related compounds); RAM, Resistive RAM, STT-RAM; Si Photonics; Spectroscopic Properties for Novel Materials for Nanoelectronics; Spintronics; Synchrotron and Neutron Techniques; Thin-Films; Ultra-Shallow Junctions; Wafer Fab; Wafer Manufacturing and New Substrate Materials

## ABSTRACTS

Camera-ready abstracts of 2-3 pages must be received by Dec. 5, 2014. The template is available in the "Author Instructions" section of the conference website. A cover page must include the name, address, telephone number, and e-mail address of the contact author. Please be sure also to include a list of 3-6 key words in the appropriate section at the end of the abstract. Your abstract should include at least one figure and/or table presenting data. Notice of acceptance of papers will be given by Jan. 9, 2015.

Accepted abstracts will appear in the conference's extended abstract book, which will be available on-line and distributed at the event.

Address all abstracts to the conference publications coordinator, Erik Secula (erik.secula@nist.gov). Please send Microsoft Word or Adobe PDF files. If e-mail is not a practical option, please contact Erik Secula at (301) 975-2050 to make alternative arrangements.

## MANUSCRIPTS

A small subset of the conference presentations may be considered for inclusion in a special edition journal. Details will be available soon.

## HOTEL DETAILS

Blocks of rooms are available at the Hilton Dresden Hotel starting at 144 €. This special room rate will be available until Mar. 2nd or until the group block is sold-out, whichever comes first. Blocks are also available at the Steigenberger Hotel de Sax (starting at 149 €) and the Ibis Hotel Königstein (starting at 65 €). To make reservations, please visit the conference website ([www.nist.gov/pml/div683/conference/](http://www.nist.gov/pml/div683/conference/)).

## REGISTRATION

The registration fee for the conference includes coffee breaks, lunches, evening events, and an extended abstract booklet with CD-ROM. The Early Bird registration fee is 430 €. Students may register for 190 €. Early Bird registration ends on Mar. 1, 2015! On-line registration will be available soon!

## BACKGROUND

With the semiconductor industry moving beyond standard silicon and further into nanoelectronics, the introduction of new materials and novel devices using innovative processing and assembly brings formidable metrology challenges. We are in an era where nanotechnology is driving us toward ever smaller, faster, cheaper, and more complex devices. Innovative metrology and characterization methods are required.

The 2015 FCMN is the tenth in a series that began in 1995. It emphasizes the frontiers and innovation in characterization and metrology of nanoelectronics. The proceedings for the first eight previous conferences were published as hardcover volumes by the American Institute of Physics, New York. The most recent publication, *Frontiers of Characterization and Metrology for Nanoelectronics: 2013*, was an extended abstract book, which was distributed at the 2013 conference. The proceedings for most of the previous entries are available free-of-charge at [www.nist.gov/pml/div683/conference/archives.cfm](http://www.nist.gov/pml/div683/conference/archives.cfm).