

## 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 presentation sessions and poster sessions for contributed papers. The poster papers will cover new developments in characterization and metrology especially at the nanoscale.



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## Call for Papers!



## 2019 International Conference on Frontiers of Characterization and Metrology for Nanoelectronics (FCMN)

April 2-4 2019  
Monterey Marriott  
Monterey, California

[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:

3D IC Analysis / Metrology;  
III-V on Si for Advanced CMOS;  
Alternative Gate Dielectrics;  
Breakthroughs in Electron Microscopy;  
Breakthroughs in Lithography;  
Channel Engineering;  
CMOS, Extreme CMOS, Beyond CMOS;  
Critical Analytical Techniques;  
Defects; Device Manufacturing;  
Diagnostics; Embedded or Buried Interfaces;  
Flexible Microelectronics;  
Graphene and 2D Materials and Devices;  
Heterogeneous Integration;  
Hybrid Structures;  
In-Situ, Real-Time Control and Monitoring;  
Integrated Metrology;  
Interconnects; Internet of Things;  
Lab-on-a-Chip; Magnetics;  
MEMS/NEMS Metrology Applications;  
Modeling/Simulation;  
More than Moore;  
Nanoelectronics Materials and Devices;  
Nanoscale Electrical and Optical Measurements;  
Non-Destructive Atomic Scale Methods;  
Novel Measurement Methods, Breakthroughs;  
Organic Electronics;  
Reliability; RAM; Si Photonics;  
Spectroscopic Properties for Novel Materials for Nanoelectronics; Spintronics;  
Synchrotron and Neutron Techniques;  
Thin-Films; Ultra-Shallow Junctions;  
Wafer Manufacturing and New Substrate Materials

## Abstracts

Camera-ready abstracts of 2-3 pages must be received by Dec. 7, 2018. The template is available in the "Abstract Submission" 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 Dec. 21, 2018.

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.

## Sponsors/Exhibitors

Sponsorship and exhibiting opportunities are available. If you are interested, please visit [www2.avs.org/conferences/FCMN/sponsors.htm](http://www2.avs.org/conferences/FCMN/sponsors.htm) for details!

## Hotel Details

Rooms are available at the Monterey Marriott Hotel starting at \$229.00 plus applicable state and local taxes. This special room rate will be available until Mar. 15, 2019, or until the group block is sold-out, whichever comes first. A very limited block of rooms will be available at further reduced government rate. Visit [www2.avs.org/conferences/FCMN/hotel-travel.htm](http://www2.avs.org/conferences/FCMN/hotel-travel.htm) for details and on-line booking!

## Registration

Registration for the conference includes coffee breaks, lunches, evening events, and an extended abstract booklet with flash drive. The Early Bird registration fee is \$600. Students may register for \$350. Early registration ends after Feb. 15, 2019! 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 2019 FCMN is the twelfth 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: 2017*, was an extended abstract book, which was distributed at the 2017 conference and posted on-line. The proceedings and presented slides 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).