

Novel Patterning Technologies for Semiconductors, MEMS/NEMS and MOEMS 2019

This conference has an open **call for papers**:

SUBMIT AN ABSTRACT

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Important Dates

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Abstract Due:
29 August 2018

Manuscript Due Date:
19 January 2019

Additional Conference Information

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Conference Chair:
Martha I. Sanchez
IBM Research - Almaden (USA)



Conference Co-Chair:
Eric M. Panning
Intel Corp. (USA)

Call for Papers

New solutions to meet current and future patterning challenges are critical to extend scaling and complement existing approaches. The Novel Patterning conference brings together expertise from a diverse group of industry/academia leaders within and outside the semiconductor field. This conference is an opportunity to present new ideas as well as learn more about the core challenges in advanced patterning.

The Novel Patterning conference showcases novel lithography and patterning techniques that provide solutions for semiconductor IC nodes, wafer-level packaging, and non-IC related technologies such as MEMS/NEMS, MOEMS, displays, photonics, metamaterials, and micro/nanofluidics, including roll-to-roll, 3D printing, and additive manufacturing. Contributions are also welcome which create hybrid approaches employing a combination of lithographic aerial imaging and patterning processes such as self-aligned pitch division, tone-reversals, selective depositions, directed self-assembly, etc.

Application Areas for Novel Patterning Technologies

- novel patterning for semiconductor 7nm IC nodes and beyond
- MEMS/NEMS, MOEMS, and microsystems
- micro/nanofluidics, lab on a chip or other bio-applications, digital micro mirror arrays
- multi-beam writing of masks and master templates
- semiconductor wafer-level packaging and fan-out
- bioelectronics and genomics/proteomics
- photovoltaics and related energy applications
- disk drives and patterned media
- large-area display/flat-panel displays
- roll-to-roll/web format device manufacturing
- LEDs
- photonic crystals and metamaterials
- negative-refractive-index materials
- nanopatterned sensors, waveguides, antennas
- building blocks for defect-tolerant computing
- smart resists and self-healing materials
- tools/materials to improve existing scanner performance.

TECHNOLOGY AREAS FOR NOVEL PATTERNING APPLICATIONS

Direct Write or Maskless Lithography and Patterning Technologies

- electron or ion charged-particle beams
- optical beams
- STED (multi-color) direct write
- resistless e-beam or ion beam direct patterning
- beam-directed nucleation, ion-beam deposition
- material ablation or material transformation reactions
- ink-jet
- scanning probe lithography, dip-pen printing, tip-based patterning
- interference, plasmonic or nearfield/evanescent wave lithography
- micromirror optical lithography
- 3D metal or ceramic sintering.

Process Based Lithography and Patterning

- directed self-assembly
- nanoimprint lithography
- selective deposition
- self-aligned or pitch division process integration techniques.

In the spirit of facilitating exchange of knowledge, we strongly encourage contributions with background on the technology, details on latest results and a clear indication of the limitations/opportunities for future development.

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