SAMPLE CALL FOR PAPERS

Conference Title:
Emerging Lithographics Technologies XI

Conference Chairs:
Michael J. Lercel, SEMATECH, Inc. (USA); **Franklin M. Schellenberg**, Mentor Graphics Corp. (USA)

Program Committee:
David T. Attwood, Jr., Lawrence Berkeley National Lab. and Univ. of California/Berkeley; **Michael Goldstein**, Intel Corp.; **Timothy R. Groves**, Leica Microsystems Lithography Ltd. (United Kingdom); **Woo-Sung Han**, SAMSUNG Electronics Co., Ltd. (South Korea); **Hiroichi Kawahira**, Sony Atsugi Technology Ctr. (Japan); **Bruno M. La Fontaine**, Advanced Micro Devices, Inc.; **J. Alexander Liddle**, Lawrence Berkeley National Lab.; **Hans Loeschner**, IMS Nanofabrication GmbH (Austria); **R. Scott Mackay**, Photronics, Inc.; **Pawitter J. Mangat**, Motorola, Inc.; **Christie R. K. Marrian**, Spansion LLC; **Anthony E. Novembre**, Lucent Technologies; **Laurent Pain**, CEA-LETI (France); **Kazuaki Suzuki**, Nikon Corp. (Japan); **William M. Tong**, Hewlett-Packard Co.

Continued scaling for cost effective semiconductor manufacturing beyond a 32-nm half-pitch will require a creative leap beyond what is practiced today. Identification and exploration of new imaging techniques can take more than 10 years, so continued development of novel patterning techniques is necessary to maintain the development cycle runway. While the barrier is high for mainstream introduction, niche applications are opening up as potential entry points for new technologies. These alternative markets may emerge to give these novel technologies an opportunity to mature and build the critical infrastructure necessary for the successful introduction of a new lithography platform. If successful, all markets would benefit from an improvement in technological capability and contained manufacturing costs.

This conference emphasizes lithography techniques that use either high-energy radiation (e.g., extreme ultraviolet, x-rays, electron- and ion-beams) imaging, direct-write (maskless) techniques, imprint approaches, or other novel lithography methods for producing fine features. Technical and scientific papers related to advanced lithographic technologies that push beyond the scope of the state-of-the-art in industry are solicited. These include:

Lithographic Imaging Systems and Radiation Sources
- optical lithography at extended UV (shorter than 157-nm)
- extreme-ultraviolet lithography (EUV) based on reflective optics
- proximity x-ray lithography
- e-beam technology (e.g., projection, direct-write, multi-beam, multi-column, and mask making)
- ion-beam lithography (projection, focused beam, and mask making).

Novel Printing Techniques and Methods
- nano-imprint lithography
- interferometric and holographic lithography
- near-field/evanescent lithography
- drop-on-demand nano-inkjet lithography.

Maskless Lithography
- large-area imaging methods
- scanning array lithography
- radiation assisted in-situ lithography
- self-assembly of devices.

Support Technologies and Processing
- resist technology for sub-50-nm lithography (e.g., for CD control, process latitude, new materials, and line-edge roughness)
- masks for newly emerging lithographic technologies
- metrology to characterize and control the imaging system
- advanced lithography modeling and simulation
- alignment principles and systems
- systems and processes characterization.

Applications for Advanced Lithographic Technologies
- semiconductor micro- and nano-electronics
- micro- and nano-fabrication processes and devices
- displays
- data storage.