

Final Call for Paper



MNC 2010

23rd International Microprocesses
and Nanotechnology Conference

November 9-12, 2010

Rihga Royal Hotel Kokura, Fukuoka, Japan

Sponsored by
The Japan Society of Applied Physics

Technical-Cosponsored by
IEEE Electron Device Society

In Cooperation with
Association of Super-Advanced Electronics Technologies
The Institute of Electrical Engineers of Japan
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Call for Papers and Final Announcement

PROFILE

Microprocess and nanotechnology play an important role of technical backbone for constructing the advanced information communications society with ubiquitous networks of the 21st century. The MNC conference is now in its 23rd year and is intended to provide a forum for discussing lithographic science and process technology using photon, electron, ion, other energetic particles and nanomaterials. This conference covers not only their applications to micro- and nano-structure fabrication and related physics and devices, but also their fusion applications with other fields like bio, medical, information, and communication technology.

1-1:DUV, EUV Lithography and Metrology

This session focuses on DUV, EUV, Immersion Lithography, and Computational Lithography including OPC, SMO, DFM. In addition, Metrology such as SEM and Scatterometry, and Mask related topics are included.

1-2:Electron- and Ion-Beam Lithography

Electron and ion beam technologies such as lithography, metrology, inspection and repair tools. Other related technologies using charged particle beams are also welcome.

1-3:Resist Materials and Processing

Resist materials(EUV, immersion, double patterning, DUV, EB, X-ray, multilayer, inorganic, molecular glass etc.), antireflective coatings, polyimide, adhesive, and other materials related to lithography. resist processes(PEB, development, rinse, resist removal, etching etc.), characterization, line edge roughness, trade-off problem, outgassing, modeling and simulation of resist process (exposure, acid diffusion, development etc.). materials and processes for the production of flat-panel display, photonics devices, and electronics packaging.

2-0 Nanocarbons

Nanocarbons, such as carbon nanotube, fullerene, graphene and nanomaterials containing graphite and diamond, and their related technologies including growth, fabrications, nanoelectronics, nanophotonics, nanomechanics, devices and integration.

2-1:Nanodevices

Nanodevices and related technologies targeting more Moore, more than Moore and beyond CMOS; next-generation Si and compound semiconductor-based FETs, graphene FETs, 1D FETs such as nanowire FETs and carbon nanotube FETs, quantum dot devices, and all other nanodevices utilizing nanostructures and nanomaterials such as inorganics, organics, and molecules. Light emitting diodes, lasers, and detectors promising for optical interconnection and other advanced applications are included. Solar cells, thermoelectric elements, piezoelectric elements, and all other energy conversion devices utilizing nanostructures and nanomaterials are also welcome.

2-2:Nanofabrication

Fabrication of nanostructures. Fabrication techniques such as scanning probe techniques, self-organizing techniques, etc. Physics and chemistry in nanofabrication processes. Etching, deposition, and related subsurface processing using photon, electron- and ion-beams, plasma, and thermal energy. Emerging technologies are also welcome.

2-3:Nanomaterials

Theory, properties, characterization and application of nanomaterials such as semiconductor materials, functional oxides, layered structure, quantum dots, nano-particles, nanowires, and organic, molecules. Materials prepared by self-organized or bottom-up approach are also included.

2-4:Nano-Tool

Nano-electromechanical system (NEMS), Nano-mechanics, Nanometrology, Metrology and repair for nanosystem, Novel observation and fabrication methods based on microscopic techniques, such as scanning probe microscopy (SPM), scanning electron microscopy (SEM) and focused ion beam (FIB).

3:Nanoimprint, Nanoprint and Rising Lithography

This session focuses nanoimprint system, process, material, applications and related inspection and metrology. Other novel nano-patterning technologies are also included.

4:Bio MEMS, Lab on a Chip

Micro/Nano Electromechanical Systems (M/NEMS) are now widely applied to Chemical, Biochemical, Medical and Environmental fields, and a new research field called μ -TAS or Lab-on-a-Chip is expanding. Fusion of microelectronic devices with materials and methods in those fields is expected to open up new scientific and business areas. Papers are solicited in the following areas (but not limited): (1) MEMS/NEMS devices for Chemical, Biochemical, Medical and Environmental fields, (2) μ -TAS and Lab-on-a-chip, (3) Bio-chips for DNA, proteins and cells, (4) Fabrication technologies for (1), (2), (3).

5:Microsystem Technology and MEMS

Technologies for fabrication, design, and characterization of micro electromechanical systems (MEMS) which include sensors, microactuators, optical devices, RF devices, etc. Integration and packaging techniques are also welcome.

INVITED SPEAKERS

PLENARY TALKS

Masayoshi Esashi(Tohoku Univ.)
Michael Roukes(Kavli Nanoscience Inst.California Inst. of Technol.)
Swaminathan Sivakumar (INTEL)

SPECIAL KEYNOTE LECTURE

Zhong Lin Wang(Georgia Institute of Technology)
Burn Lin(Senior director of micropatterning division at TSMC)

SESSION INVITED SPEAKERS

1-1:DUV, VUV, EUV Lithography and Metrology

Ichiro Mori (Selete)

1-3:Resist Materials and Processing

Vivek M. Prabhu (NIST)

2-2:Nanofabrication

Kuniyuki Kakushima (Tokyo Inst. of Technol.)

3:Nanoimprint, Nanoprint and Rising Lithography

Hong Yee Low (IMRE)

5:Microsystem Technology and MEMS

Kazusuke Maenaka (Univ. of Hyogo)

SPECIAL SYMPOSIUM

[A] Efficient Litho Technologies – Holding the Keys to “Green Lithography”

Organizers: S. Nagahara (Renesas Electronics) and T. Sato (Toshiba)

TECHNICAL SEMINAR in JAPANESE

Technical Seminar on “Graphene”

Organizers: J. Fujita (Univ. of Tsukuba) and S. Akita (Osaka Pref. Univ.)

YOUNG AUTHORS TRAVEL ASSISTANCE

Young authors, under age 33, who will present paper at MNC2010 are able to apply for Young Authors Travel Assistance. It supports a part of their travel expense within a limited amount of budget. The support amount depends on the number of persons accepted. It is the conference policy that the persons who will receive the assistance are asked to help the session progress in terms of timekeeping, speaker's slide preparation etc. Those who are interested in application may contact the MNC 2010 Secretariat to get the application form no later than 15th September.

SUBMISSION of ABSTRACT

Please visit our Web Site after middle of June, 2010. <http://imnc.jp/>

Abstract Deadline: June 30, 2010

1. INTRODUCTION

This describes instructions for the preparation of a camera-ready abstract. Prospective authors are encouraged to submit a 2-page abstract. The abstract must clearly state the purpose, achievement and significance of the work. Please note that the most common cause of rejection of submitted papers is a lack of specific results, e.g. figures and tables, and of the description on experimental/theoretical procedures. The abstract must be prepared following the instruction because it is printed by the photo-offset method. The abstracts are published as the Digest of papers, which will be available for registrants at the conference.

2. INSTRUCTION

The abstract should be neatly typed on A4-size or US letter size (8.5” x 11”) plain white sheets. Type the title on the first line, authors' name(s) on the third line and addresses on the fourth line. Title, author(s) and address(es) should be typed centered. Begin the texts two lines below the last line of the title/author section. The second page should be used for indicating figures, tables and photographs. Caption should be typed underneath the figure and above the table.

Additional typing guidelines are summarized in Table 1.

Sectioning is not always required and is optional.

3. SUBMISSION

Submit the abstract in a PDF format with the copyright form.

Table 1. Typing guidelines for the abstract

PDF File: Please avoid setting up user password and master password in the PDF files. A PDF file must be smaller than **3MByte**.

Line spacing: single-spaced.

Format: An A4-size or a 21.6cm×28cm is preferable. The first page must include the title of the paper, author(s), affiliation(s), address, e-mail address, and article text.

Font Size: 11 - 12 point font is recommended for text.

Character: Times-Fonts Family and Helvetica-Fonts Family are recommended. As for Symbolic Characters such as (α) (μ), please use Symbol-Fonts Family. **DO NOT** use two byte characters and Asian Fonts, e.g., Japanese, Korean, and Chinese characters, MS Gothic, MS Mincho, Ryumin, Batang etc.

Late News Paper Deadline: September 15, 2010

JJAP PROCEEDINGS

Authors of accepted papers are recommended to submit full-length manuscripts to Japanese Journal of Applied Physics (JJAP). Papers passed through the standard reviewing procedures of JJAP will be published in a special issue. This issue will be delivered to the participants as the conference proceedings. The authors (or their institution) are requested to pay the publication charge for the JJAP special issue (Microprocesses and Nanotechnology) when the paper is accepted.

CONFERENCE AWARDS

Conference awards will be given to The Outstanding Paper(s), The Most Impressive Poster(s), The Most Impressive Paper, and The Young Author's Award. The outstanding paper(s) will be selected from the paper published in the JJAP special issue (Microprocesses and Nanotechnology). The most impressive paper is selected from oral presentations. The young author's award is selected from oral and poster presentations. The most impressive poster(s) will be selected on the basis of participant's vote.

REGISTRATION

Code	Registration	Until October 20	On site Registration
FUL-1	Full Conference with Digest(USB), Proceedings and Banquet	JPY55,000	JPY65,000
FUL-2	Full Conference with Digest(USB) and Proceedings (No Banquet)	JPY50,000	JPY60,000
STU	Student Conference with Digest(USB), (No Proceedings, No Banquet)	JPY15,000	JPY15,000
BQT	Banquet Ticket	JPY 5,000	JPY 5,000
EXHI / BITOR	Technical Exhibitor for Full Conference	JPY20,000	JPY20,000
ONLY TEC	Technical Seminar on November 9 in Japanese EXCEPT MNC 2010 Participants and student	JPY3,000	JPY3,000
TEC-FREE	Technical Seminar in November 9 in Japanese (MNC 2010 Participants and Student)	Free	Free

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	J. Ahn (Hanyang Univ.)	
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	T. Kaneko (Tohoku Univ.)	M. Tanemura (Nagoya Inst. of Technol.)

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