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Tsukuba Nano-tech Innovation Arena (TIA nano)

TIA Nanotech International Workshop

Registration: http://unit.aist.go.jp/ripo/ci/tia/tia.html

Monday, February 15

10:00 - 10:20 **Opening session**

10:00-10:20 **TIA**
Dr. Junji Itoh, Vice President of AIST

10:20 - 12:00 **Mo-1: Management session**

10:20 - 10:40 **IMEC**
Dr. Chris Van Hoof, Director of Heterogeneous Integrated Microsystems

10:40 - 11:00 **Albany NanoTech /College of Nanoscale Science & Engineering (CNSE)**
Dr. Makoto Hirayama, Professor, Associate Vice President for Strategic

11:00 - 11:20 **MINATEC**
Dr. Laurent Malier, Director of MINATEC-Leti (Tentative)

11:20 - 12:00 **Panel Discussion**
Moderetor
Dr. Hisatsune Watanabe, President and COE, Selete
Panelists: TIA, IMEC, Albany-CNSE, MINATEC

13:20 - 15:10 **Mo-2: Networking between Nanotech Research Centers & Labs.**

13:20 - 13:40 **National Nanotechnology Infrastructure Network (NNIN)**

Dr. Lawrence S. Goldberg, National Science Foundation

13:40 - 14:00 **Center for Integrated Nanotechnology (CINT)**
Prof. Bob Hwang, Director, Center for Integrated Nanotechnology

14:00 - 14:20 **NanoNed**
Prof. Dr. Wilfred G. van der Wiel, Scientific Director NanoNed Japan Office

14:20 - 14:40 **Nanotechnology Network (Nanonet)**
Dr. Testuji Noda, Vice President, NIMS

14:40 - 15:10 **Panel Discussion**
Moderetor:
Dr. Hisatsune Watanabe, President and COE, Selete
Panelists: NNIN, CINT, NanoNed, NIMS

15:10 - 15:30 <Break>

15:30 - 17:30 **Mo-3 Intellectual Property**

15:30 - 15:40 **Introduction of Mo-3 session**
Dr. Shingo Ichimura, Vice President of AIST
15:40 - 16:00 **IMEC**
Dr. Chris Van Hoof, Director of Heterogeneous Integrated Microsystems
16:00 - 16:20 **Albany-CNSE**
Prof. Makoto Hirayama, Associate Vice President for Strategic
16:20 - 16:40 **MINATEC-LETI**
Dr. Laurent Malier, Director of MINATEC/Leti
16:40 - 17:00 National Center for industrial Property **INPIT**
Mr. Yoshi Shibuya, Director of H.R.D. D. of INPIT
17:00 - 17:30 **Discussion**
Moderetor:
Dr. Shingo Ichimura, Vice President of AIST(tentative)
IMEC, Albany-CNSE, MINATEC, INPIT

18:00 - 19:30 **Reception**

Tuesday, February 16

9:00 - 12:00 **Tu-1: Nanoelectronics**

9:00 - 9:15 **Introduction of Tu-1 session**
Moderator:
Dr. Toshihiko Kanayama, AIST
9:15 - 9:35 "**Green Nanoelecronics at TIA"**
Dr. Naoki Yokoyama, Fujitsu
9:35 - 9:55 "**Nanophotonics at TIA"**
Prof. Yasuhiko Arakawa, Univ. Tokyo
Comment:
9:55 - 10:05
Dr. Bernard S. Meyerson, IBM
10:05 - 10:15
Dr. Paolo Gargini, Intel

10:15 - 10:30 <Break>

10:30 - 12:00 **Panel Discussion**
Theme: "What are the most effective ways to develop Nanoelectronics for what application areas?"
Moderator: Dr. Toshihiko Kanayama, AIST
Panelists:
Japan: Dr. Naoki Yokoyama, Fujitsu,
Prof. Yasuhiko Arakawa, Univ. Tokyo,
Europe: Dr. Chris Van Hoof, IMEC
US: Prof. Makoto Hirayama, Albany-CNSE,

13:00 - 14:40 **Tu-2 N-MEMS**

13:00 - 13:10 **"Introduction of Tu-2 session"**,
Moderator
Dr. Ryutaro Maeda, AIST
13:10 - 13:30 **"Challenge for the hetero-convergence"**
Prof. Esahsi, University of Tohoku
13:30 - 13:50 **"Key issues for commercialization of MEMS"**
Prof. Pisano, BSAC
13:50 - 14:10 "**Competition and collaboration among research institutes**",
Dr. Laurent Malier, LETI (Tentative)
14:10 - 14:40 **Discussion**

14:40 - 15:00 <Break>

15:00 - 16:50 **Tu-3 Nano-characterization**

15:00 - 15:10 **Introduction of Tu-3 session**
Moderator:
Dr. Masataka Ohkubo, AIST
15:10-15:35 **"The Assessment of External Needs: Applying the United States Measurement System and Subsequent Activities at NIST to Nanotechnology"**
Dr. Clare Allocca, NIST
15:35 - 16:00 **"Nanocharacterization in Korea"**
Dr. Seong Jai Cho, KRISS
16:00 - 16:25 **"Nanocharacterization in Germany"**
Dr. Henning Heuer, Fraunhofer-Gesellschaft
16:25 -16:35 "**AIST Open Innovation Platform for Nanocharacterization and Nanofabrication"**
Dr. Hiroyuki Akinaga, AIST
16:35 - 16:50 **Discussion**

16:50 **Concluding remarks**
Dr. Toshihiro Matsui, Program Director, AIST
17:00 **Concluding session**

Scope of the sessions

Management session

Mo1 (contact address: yano-tomosaburo@meti.go.jp)

Overview of Management of Nanotech Research Centers: What should we learn from each other?

Each nanotech center presents its mission and advantage as a nanotech research center, and describes its management, for innovation, especially the good practice of public-private collaboration. The main discussion subject is how to optimize the Management of Nanotech innovation and its organization.

Mo2 (contact address: akinaga.hiro@aist.go.jp)

Collaboration between Nanotech Research Centers: How to network national and international nanotech research labs successfully?

The leaders of networking type nanotech center present the methods to optimize the boundary of competition and collaboration both inside each center and between national labs. The network structure, core research functions, strategies to promote networking inside and outside of the program will be presented. The advantage of the networking type center compared to the COE type center will be discussed. Also the drivers and the barriers of the collaboration in the networking type nanotech research center will be discussed.

Mo3 (contact address: a-kageyama@aist.go.jp, kh-park@aist.go.jp)

Intellectural Property: Next generation strategy for common platform type R&D facilities.

Each organization introduces their IP policy and management, especially, the methods to optimize the boundary of common IP and exclusive IP in public-private collaborative projects. Discussion topics and issues include the new concept definition such as, pre-competitive vs. competitive, open-Innovation vs. proprietary-Innovation, market monopoly vs. open community, methodology (patent-pool, -consortium, -commons, -basket,) " ,

Technical session:

Tu-1 (contact address: kanayama.t@aist.go.jp)

Nanoelectronics and Nano-photonics: What are the most effective ways to develop Nanoelectronics for what application areas?"

Nano-electronics including nano-photonics is one of the core research components of TIA. Several related national projects will start from the end of this fiscal year in the scheme of the " Funding Program for World-Leading Innovative R&D on Science and Technology ". Two leaders of the approved projects are invited, and the present status, the key technology, future application of the nano-electronics will be presented. In the panel discussion, the future directions and possible application areas of the nano-electronics will be discussed with the audience.

Tu-2 (contact address: maeda-ryutaro@aist.go.jp)

MEMS/NEMS

The global leaders of the MEMS/NEMS research centers present their R&D activities , the research collaboration and the commercialization of the MEMS/NEMS. The future challenges in the MEMS/NEMS research as well as the strategy for the increasing MEMS applications (market size) will be discussed.

Tu-3 (contact address: m.ohkubo@aist.go.jp)

Nanocharacterization

The importance of nanocharacterization infrastructure for nanotech innovation will be spotlighted. We discuss current status of nanocharacterization in United States, Europe, and Asia, nanocharacterization management, forefront techniques, and possible future international collaboration. Speakers include managers or researchers of NIST, KRISS, Fraunhofer-Gesellschaft, and AIST.