

DRAFT

Tsukuba Nano-tech Innovation Arena (TIA nano)

TIA Nanotech International Workshop

Monday, February 15

(contact address)

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

(yano-tomosaburo@meti.go.jp)

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, CNSE
at State University of New York at Albany

11:00 - 11:20 MINATEC

Dr. Jean Charles GUIBERT, Director of MINATEC

Mrs. Adrienne PERVES, GIANT Project

11:20 - 12:00 Panel Discussion

Moderator

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.

(akinaga.hiro@aist.go.jp)

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. Huub Salemink, Vice Chairman, NanoNed/ Scientific Director of the Centre of Competence at the 3TU Federation for Nanotechnology Applications Kavli Institute of Nanoscience, Delft University of Technology

14:20 - 14:40 Nanotechnology Network (Nanonet)

Dr. Testuji Noda, Vice President, NIMS

14:40 - 15:10 Panel Discussion

Moderator:

Kazunobu TANAKA, Principal Fellow, CRDS-JST

Panelists: NNIN, CINT, NanoNed, NIMS

15:10 - 15:30 <Break>

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

(a-kageyama@aist.go.jp, kh-park@aist.go.jp)

15:30 - 15:40 Introduction of Mo-3 session

Dr. Shingo Ichimura, Vice President of AIST

15:40 - 16:00 MINATEC

Dr. Jean-Charles GUIBERT, Director of MINATEC

16:00 - 16:20 Albany-CNSE

Prof. Makoto Hirayama, Associate Vice President for Strategic

16:20 - 16:40 IMEC

Dr. Chris Van Hoof, Director of Heterogeneous Integrated Microsystems

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

Moderator:

Dr. Shingo Ichimura, Vice President of AIST(tentative)

IMEC, Albany-CNSE, MINATEC, INPIT

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

Tuesday, February 16

(contact address)

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

(kanayama.t@aist.go.jp)

9:00 - 9:15 **Introduction of Tu-1 session**

Moderator:

Dr. Toshihiko Kanayama, AIST

9:15 - 9:35 **“Green Nanoelectronics 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

(maeda-ryutaro@aist.go.jp)

13:00 - 13:10 "Introduction of Tu-2 session",

Moderator

Dr. Ryutaro Maeda, AIST

13:10 - 13:30 "Challenge for the hetero-convergence"

Prof. Esashi, 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

14:10 - 14:40 Discussion

14:40 - 15:00 <Break>

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

(m.ohkubo@aist.go.jp)

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. Lorenz Granrath, Fraunhofer-Gesellschaft, Japan Office (Tentative)

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 session

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. The details of the discussion will be as follows.

- History: The situation around nanotech when the research center was planned, and the promotive force for the founders to launch the research center
- Collaboration: Who are the supporters and participants? What are the advantages for them to gather together and how the open-innovation scheme works?
- Advantage: What do you think are the special characteristics or advantages of each research center over other similar activities? What management was enforced in order to strengthen those distinctive features?
- Innovation: Any innovations derived / expected from the research center. Any means provided to promote innovations to happen

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)

Intellectual 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)

Nano-electronics and Nano-photonics: What are the most effective ways to develop Nano-electronics 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.