

**International Workshop on Intelligent Nano-Process
(Satellite Workshop of International Symposium on
Advanced Fluid Information and Transdisciplinary Fluid Integration)**

<http://www.ifs.tohoku.ac.jp/afi-tfi-2007/>

Sponsored by Institute of Fluid Science (IFS), Tohoku University

Co-sponsored by Intelligent Nano-Process Collaboration Core, IFS, Tohoku University and
21st Century COE Program, The Exploration of the Frontiers of Mechanical Science Based on
Nanotechnology (Tohoku University)

13:30~18:00, December 15th, 2007

Institute of Fluid Science, Tohoku University

Scope:

Ultra-high-functional semiconductor devices typified by ULSI, TFT, and solar cells support the IT revolution of the 21st century, which is embodied in such products as intelligent and networked household appliances. These devices are manufactured by means of thin-film material deposition and processing technologies that utilize microparticles such as electrons, atoms/molecules, ions and photons. We are also considering introduction of bio-technologies into future nano-devices. We conduct research on ways to generate charged particles (positive and negative ions, electrons) and neutral particles (atoms/molecules) and associated acceleration technologies (including beam technologies), as well as research on particle flow and the latest bio-nano processes. Through these efforts, we are working to develop ultra-precise microfabrication (etching) technologies, formation (deposition) technologies for highly functional thin films, and various kinds of surface processing technologies. Our goal is to realize "Intelligent Nano-Process" through the fusion of physical experimentation and computer simulation.

Chair	Prof. Dr. Seiji Samukawa (Institute of Fluid Science, Tohoku Univ.)
Organizer	Prof. Dr. Ichiro Yamashita (Nara Institute of Science and Technology, NAIST) Prof. Dr. Satoshi Hamaguchi (Osaka Univ.) Dr. Kazuhiko Endo (Advanced Industrial Science and Technology, AIST) Prof. Dr. Hideo Miura (Tohoku University) Prof. Dr. Takashi Tokumasu, Prof Dr. Takehiko Sato (Tohoku University) Dr. Yoshinori Sato (Tohoku University)
Secretary	Dr. Hiroto Ohtake (Institute of Fluid Science, Tohoku Univ.)

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Program:

- 13:30 Prof. Samukawa (Tohoku University)
Introductory talk
- 13:50 Prof. Mauricio Terrones (IPICYT)
The Importance of Structural Defects in Nanotube Technology:
From Theory to Applications and Toxicity.
- 14:30 Prof. Hiroshi Kawarada (Waseda University)
Diamond transistors and carbon nanotube electrodes fabricated by intelligent nanoprocess
- 15:10 Prof. Katsuhisa Kitano
Applications of nonequilibrium atmospheric pressure plasma jets to bio- and
nano-processes in liquid
- 15:50 Break
- 16:00 Prof. Chi On Chui (UCLA)
Recent Advances in High Mobility Nanoelectronic Devices
- 16:40 Prof Yukiharu Uraoka (NAIST)
New Functional Devices Developed with Bio Nano Process
- 17:20 Prof. Yoshihiro Shinada (Waseda University)
Semiconductor with ordered dopant arrays and its electrical characteristic
- 18:00 Closing