

Program

**International Symposium
on
Fusion of Nano and Bio Technologies**
(FNB 2003)

March 9 (Sun)-10(Mon), 2003
Tsukuba International Congress Center
[EPOCHAL]
Tsukuba, Japan

Organized by

Biomaterials Center, National Institute for Materials Science
AND
Nanotechnology Researchers Network Center of Japan

nanonet-0219

SCOPE

International Symposium on Fusion of Nano and Bio Technologies (FNB) will be held on 9th and 10th in March, 2003. The new symposium is organized by the Biomaterials Center, National Institute for Materials Science and Nanotechnology Researchers Network Center of Japan.

The fusion of nano- and bio-technologies is now creating multidisciplinary research fields concerned with bio- and electronic- engineering at nanometer, molecular and cellular levels. For example, this fusion of technologies allows us to dream a miniaturized biochip achieving various functions of a hospital, optimal medical treatments for individuals by analyzing and manipulating cells/ biomolecules, and ultra-high density IC by nano-wired transistors utilizing biochemical techniques such as DNA hybridization. For these goals, the research of nano-biotechnologies requires multi-skilled teams; the FNB presents opportunities to inspire wide-ranging, stimulating and concentrated discussion with many researchers from various backgrounds. It also intends to promote interdisciplinary collaboration among chemistry, physics, biology, material science, electronics, mechanics, medical science and many others fields.

For this perspective, our effort for the fusion of technologies will foster various new fields of nano- and bio-sciences and engineering, thereby leading an advanced society with highly informative, healthy and welfare life.

ORGANIZING COMMITTEE

Symposium Co-chairpersons:

Prof. Yasuhiro Horiike (The Univ. of Tokyo)
Prof. Teruo Okano (Tokyo Women's Medical Univ.)

International Advisory Committee:

Prof. Masuo Aizawa (Tokyo Inst. of Tech.)	Prof. Teruo Kishi (NIMS)
Prof. Mitsuru Akashi (Kagoshima Univ.)	Prof. Amit Meller (The Rowland Inst. at Harvard, Harvard Univ.)
Dr. Aaron Bensimon. (Inst. Pasteur)	Prof. Yutaka Miyanaga (Univ. of Tsukuba)
Prof. Daniel Branton (Harvard Univ.)	Prof. Shuming Nie (Georgia Inst. of Technology and Emory Univ.)
Dr. Roger Brent (Molecular Sciences Inst.)	Prof. Teruo Okano (Tokyo Women's Medical Univ.)
Prof. David Grainger (Colorado State Univ.)	Prof. Junzo Tanaka (BMC, NIMS)
Prof. Allan S. Hoffman (Univ. of Washington)	Prof. Tetsuya Tateishi (The Univ. of Tokyo; BMC Advisory Board)
Prof. Yasuhiro Horiike (The Univ. of Tokyo)	Prof. Kazunori Kataoka (The Univ. of Tokyo)
Prof. Yoshito Ikada (Suzuka Univ. of Medical Science; BMC Advisory Board)	

Local Organizing Committee:

Mr. Akira Fujisawa (KYOCERA Corp.)
Dr. Shozo Fujita (FUJITSU)
Dr. Takao Hanawa (BMC, NIMS)
Mr. Hisao Kawaura (NEC Corp.)
Prof. Eiry Kobatake (Tokyo Inst. of Tech.)
Dr. Hisatoshi Kobayashi (BMC, NIMS)
Dr. Yuji Miyahara (BMC, NIMS)
Prof. Yukio Nagasaki (Tokyo Univ. of Science)
Dr. Hiroki Ogawa (Univ. of Tokyo)
Mr. Tetsuro Ogawa (PENTAX Co., Ltd.)
Dr. Hidenori Ohtsuka (BMC, NIMS)
Dr. Shiroh Saitoh (TOSHIBA)
Dr. Minoru Sakairi (HITACHI Ltd.)
Dr. Masataka Sakane (Univ. of Tsukuba)
Dr. Naoya Sasaki (HITACHI)

Mr. Noriaki Shirahama (Kawasumi Lab, Inc.)
Dr. Satoru Shiono (MITSUBISHI Elec. Corp.)
Prof. Koji Sode (Tokyo Univ. of Agriculture and Tech.)
Prof. Yasuhiko Tabata (Kyoto Univ.)
Dr. Kazuo Takakuda (Tokyo Medical and Dental Univ.)
Dr. Madoka Takai (The Univ. of Tokyo)
Dr. Yuzuru Takamura (The Univ. of Tokyo)
Dr. Akiyoshi Taniguchi (BMC, NIMS)
Dr. Toshimasa Uemura (TERC, AIST)
Dr. Akiko Yamamoto (BMC, NIMS)
Dr. Masayuki Yamato (Tokyo Women's Medical Univ.)

Secretary General:

Dr. Junzo Tanaka (BMC, NIMS)

AWARDS

The organizing committee will present **FNB 2003 Poster Award** to the best poster presentation in the symposium. The winner will be announced at the closing remark.

REGISTRATION

All participants are requested to register in advance (before **March 1, 2003**). Registration is free of charge, however, the fee for banquet will be collected at the registration desk. Registration form is available on our web site at <http://www.nanonet.go.jp/>.

PROGRAM

March 8, Saturday

18:00-20:30 <REGISTRATION / WELCOME PARTY>

March 9, Sunday

08:00-09:00 <REGISTRATION / POSTER PREPARATION>

09:00-09:10 Opening Remark

Teruo Okano (Tokyo Women's Medical Univ.)

Chair: Junzo Tanaka (BMC, NIMS)

09:10-09:30 Opening Lecture

Tissue Engineering under Clinical Trials

Yoshito Ikada (Suzuka Univ. of Medical Science)

Chair: Takao Hanawa (BMC, NIMS)

09:30-10:10 Lecture 1

Biomedical Nanotechnology: from Nanoprobes in Molecular Imaging to Nanomaterials in Tissue Engineering

Shuming Nie (Georgia Inst. of Tech. and Emory Univ.)

10:10-10:40 Lecture 2

Functional Bioengineered Human Corneal Sheet Using a Temperature Responsive Cell Culture Surface

Kohji Nishida (Osaka Univ.)

10:40-11:00 <BREAK>

Chair: David Grainger (Colorado State Univ.)

11:00-11:40 Keynote Lecture 1

Smart Nano-Sized Biomolecular Systems

Allan S. Hoffman (Univ. of Washington)

Chair: Yuji Miyahara (BMC, NIMS)

11:40-12:40 Oral Poster Session

One-minute presentations by poster presenters

12:40-14:00 <LUNCH>

Chair: Teruo Okano (Tokyo Women's Medical Univ.)

14:00-14:30 Keynote Lecture 2

Bio/Nanotechnology for Molecular and Cellular Biodevices

Masuo Aizawa (Tokyo Inst. of Tech.)

14:30-15:10 **Lecture 3**
Recent Developments in Nanobiotechnology from the US and Europe
David Grainger (Colorado State Univ.)

15:10-15:40 **Lecture 4**
Intelligent Nano-Surfaces for Oligo-Cell Biology and Tissue Engineering
Masayuki Yamato (Tokyo Women's Medical Univ.)

15:40-16:00 <BREAK>

Chair: Masayuki Yamato (Tokyo Women's Medical Univ.)

16:00-16:30 **Lecture 5**
Prokaryotic and Eukaryotic Genome Architecture Studied by Nano-Scale Imaging
Kunio Takeyasu (Kyoto Univ.)

16:30-17:00 **Lecture 6**
Digital Signal Transduction in the Cell Membrane: an Approach by Single Molecule Bionanotechnology
Akihiro Kusumi (Nagoya Univ.)

17:00-17:30 **Lecture 7**
Molecular Computing and Molecular Programming
Masami Hagiya (The Univ. of Tokyo)

18:30-20:30 <BANQUET>

March 10, Monday

Chair: Yasuhiro Horiike (The Univ. of Tokyo)

09:00-09:30 **Lecture 8**
Microfluidic 3D Devices for Ultra-Low-Volume Droplets Operation
Minoru Seki (The Univ. of Tokyo)

09:30-10:00 **Lecture 9**
Physical and Electrical Properties of DNA: Form Film, Bundle to Single Molecule
Hitoshi Tabata (Osaka Univ.)

10:00-10:30 **Lecture 10**
Challenge for the Development of Bio-Nanodevice for Future Genomic Medicine
Yoshinobu Baba (The Univ. of Tokushima, CREST JST, Sing.-mole. Bioanal. Lab., AIST)

10:30-12:10 **Poster Session**

12:10-13:20 <LUNCH>

Chair: Yoshinobu Baba (The Univ. of Tokushima)

13:20-14:00 **Lecture 11**
The Transport Dynamics of Polynucleotides through Nanoscale Size Pore
Amit Meller (Harvard Univ.)

14:00-14:30 **Lecture 12**
Chemical and Biotechnologies on Microchips
Takehiko Kitamori (The Univ. of Tokyo)

14:30-15:00 **Lecture 13**
Studies on Single Cells' Dynamics Using On-chip Microculture System
Kenji Yasuda (The Univ. of Tokyo)

15:00-15:15 <BREAK / POSTER REMOVAL>

Chair: Yukio Nagasaki (Tokyo Univ. of Science)

15:15-15:45 **Lecture 14**
Chemo-Mechanical Coupling in a Rotary Molecular Motor Revealed by Single Molecule Physiology
Kazuhiko Kinoshita (Okazaki Natl. Res. Inst.)

15:45-16:15 **Lecture 15**
Novel Synthetic Technique for Biomaterials; Alternate Immersion Process for Preparing Hydroxyapatite-Polymer Hybrid Materials and Bioactive Polymer Assemblies
Mitsuru Akashi and Takeshi Serizawa (Kagoshima Univ.)

16:15-16:45 **Lecture 16**
Nano-Assembly of Multi-Functional Block Copolymers as Vehicle for Gene and Drug Delivery—Toward Artificial Viruses
Kazunori Kataoka (The Univ. of Tokyo)

16:45-17:00 **FNB 2003 Poster Award Presentation**
Closing Remark

Yasuhiro Horiike (The Univ. of Tokyo)

Poster Papers

P-01 *Encapsulation and Culture of Chondrocytes in Alkaline-Treated Collagen Gels Prepared Using Poly(Ethylene Glycol)-Based Four-Armed Star Polymer*

Tetsushi Taguchi¹, Hisatoshi Kobayashi¹, Kazunori Kataoka^{1,2} and Junzo Tanaka¹

¹BMC, NIMS, ²Dept. Mater. Science, Grad. Sch. Eng., The Univ. of Tokyo

P-02 *Preparation of Quantum Dot in Water and Its Biomedical Applications*

Atsuhiko Ogura¹, Eui-Chul Kang¹, Hisato Hayashi², Yuka Sunaga², Yukio Nagasak², Hidenori Ohtsuka³ and Kazunori Kataoka⁴

¹Tsukuba Research Laboratory, NOF Corporation, ²Dept. of Mater. Science & Tech, Science Univ. of Tokyo, ³BMC, NIMS, ⁴Dept. of Mater. Science, Grad. Sch. Eng., The Univ. of Tokyo

P-03 *Classical and Quantum Dynamics in Nano-Scale Magnetic Core of Ferritin Protein*

Hiroaki Mamiya, Isao Nakatani and Takao Furubayashi

Nanomaterials Laboratory, NIMS

P-04 *Simulation of Flow Around Nano Size Structure in Micro Channel*

Hirokazu Inokuchi, Yuzuru Takamura and Yasuhiro Horiike

Dept. of Mater. Eng., Grad. Sch. Eng., The Univ. of Tokyo

P-05 *DNA Size Separation by Nano-Fabricated Pillar Matrix*

Takeshi Shinji¹, Yojiro Tezuka¹, Masanori Ueda^{2,3}, Yoshinobu Baba^{2,3}, Yuzuru Takamura¹ and Yasuhiro Horiike¹

¹Dept. Mater. Eng., Grad. Sch. Eng., The Univ. of Tokyo, ²Dept. of Medical Chem., The Univ. of Tokushima, ³CREST, Jpn. Science and Tech. Corporation

P-06 *DNA Analysis Employing Electric and Hydrodynamic Force Trap in Nano Channel*

Yuzuru Takamura¹, Masanori Ueda^{2,3}, Yoshinobu Baba^{2,3} and Yasuhiro Horiike¹

¹Dept. Mater. Eng., Grad. Sch. Eng., The Univ. of Tokyo, ²Dept. of Medical Chem., The Univ. of Tokushima, ³CREST, Jpn. Science and Tech. Corporation

P-07 *Electrophoresis of DNAs in Micro-Pillars Fabricated in Polydimethylsiloxane*

Ken-ichi Inatomi, Shin-ichi Izuo and Satoru Shiono

Advanced Tech R&D Center, Mitsubishi Electric Corp.

P-08 *Separation of DNA Molecules with Nano-Fabricated Channel*

Masakazu Baba, Tohru Sano, Noriyuki Iguchi, Kazuhiro Iida, Toshitsugu Sakamoto, and Hisao Kawaura

Fundamental Research Laboratories, NEC Corporation

P-09 *Size Exclusion Chromatography Using Self-Organized Nano-Pores In Anodic Porous Alumina*

Tohru Sano, Noriyuki Iguchi, Kazuhiro Iida, Hisao Kawaura, Masakazu Baba and Toshitsugu Sakamoto

Fundamental Research Laboratories, NEC Corporation

P-10 *Rapid Plasma Separation Using Planar Ultra-Filter : Evaluation of Hemolysis*

Kazuhiro Iida, Masakazu Baba, Tohru Sano, Noriyuki Iguchi and Hisao Kawaura

Fundamental Research Laboratories, NEC Corporation

P-11 *Nanopillar Structures for Nano-Bio Applications*

Akihiro Miyauchi¹, Masahiko Ogino¹, Shigehisa Motowaki¹, Kosuke Kuwabara¹ and Taku Sakazume²

¹Hitachi Research Laboratory, Hitachi Ltd., ²Medical Systems Design Dept., Hitachi High-Technologies Corporation

P-12 *Construction of Nano-Composites Based on Artificial Proteins and Carbon Nanohorns*

Daisuke Kase¹, Jin Zhu², Daisuke Kasuya², Masako Yudasaka², Sumio Iijima^{2,3} and Kiyotaka Shiba^{1,4}

¹Dept. of Protein Eng., Cancer Inst., Japanese Foundation for Cancer Research, ²SORST, JST, ³Dept of Physics, Meijo Univ., ⁴CREST, JST, c/o Cancer Inst.

P-13 *Integrated Miniature Bio-switching Devices*

Masayasu Suzuki, Satoshi Ito, Kazuyoshi Yamamoto and Yasunori Iribe

Faculty of Eng., Toyama Univ.

P-14 *Electrochemical DNA Chip: Simulations and Applications*

Shigenori Tanaka¹, Satoshi Itoh¹, Noriyuki Kurita², Satoshi Yokojima^{3,4} and Akira Okada⁴

¹Advanced Mater. & Devices Laboratory, Toshiba R&D Center, ²Toyohashi Univ. of Tech., ³Jpn Science and Tech Corporation, ⁴Inst. of Mater. Science, Univ. of Tsukuba

P-15 *Fabrication of DNA Nanoarray on Silica Surface*

Guo-Jun Zhang¹, Takashi Tani¹, Tamotsu Zako², Takashi Funatsu², Iwao Ohdomari¹

¹Dept. of Elec., Info. and Commun. Eng., ²Dept. of Physics, Sch. of Science and Eng., Waseda Univ.

P-16 *Construction of Single-Stranded DNA-Protein Conjugates Using Sequence-Specific Single-Stranded DNA Binding Protein and its Application for Nano-Fabrication Techniques of Protein Chip*

Tomohiko Yamazaki and Koji Sode

Dept. of Biotechnology, Tokyo Univ. of Agriculture & Technology

P-17 *Electrochemical DNA Sensor Using Glucose Dehydrogenase as a Label for Probe DNA*

Kazunori Ikebukuro, Yoko Saito Chiharu Kiyohara and Koji Sode

Dept. of Biotechnology and Life science, Tokyo Univ. of Agriculture and Technology

P-18 *Manipulation of a Single DNA Molecule Using Nano-Particle Clustering by Laser*

Ken Hirano¹, Akira Mizuno² and Yoshinobu Baba^{1,3}

¹Dept. of Medical Chem., Faculty of Pharmaceutical Sciences, The Univ. of Tokushima, and CREST of JST, ²Dept. of Ecological Eng., Toyohashi Univ. of Tech., ³Single Molecule Bioanalysis Laboratory, AIST

- P-19** *Development of Automated Micromanipulation System for Biological Application*
Kazushi Ohta¹, Hiroyuki Saito², Libo Zhou², Jun Shimizu² and Hiroshi Eda²
¹Satellite Venture Business Laboratory, Ibaraki Univ., ²Dept. of System Eng., Ibaraki Univ.
- P-20** *On-Chip Biosensing of Estrogen Receptor at Single Molecular Level by AFM*
Eiry Kobatake, Dedy H. B. Wicaksono, Masayasu Mie, Yasuko Yanagida, Masuo Aizawa
Dept. of Biological Information, Grad. Sch. of Biosci. and Biotech., Tokyo Inst. of Tech
- P-21** *Possibility of Rapid Single Particle Analysis for Biomacromolecules using SPR and AFM Combination*
Osamu Matsumoto¹, Kayo Togiya¹, Denshi Taka[†], Issey Okazaki² and Gozoh Tsujimoto¹
¹Grad. Sch. of Pharmaceutical Sciences, Kyoto Univ., ²Biacore K. K.,
- P-22** *Development of Nano Interface Molecule to Facilitate Electron Transfer Between Glucose Dehydrogenase and Electrode*
Junko Okuda and Koji Sode
Dept. of Biotechnology, Tokyo Univ. of Agriculture and Technology
- P-23** *Examination of Hepatic Function by Colorimetric Microchip*
Akio Oki¹, Akinori Yokogawa², Yuzuru Takamura¹ and Yasuhiro Horiike¹
¹Dep. of Mater. Eng., The Univ. of Tokyo, ²Process Tech. Div., ROHM,
- P-24** *Development of Disposable Health-Care Chip System for Blood Diagnostics*
Hiroki Ogawa¹, Akio Oki², Satomi Shinbashi¹, Madoka Taka[†], Yuzuru Takamura², Jun Kikuchi², Masao Nagai¹ and Yasuhiro Horiike
¹Jpn. Science and Technology Corporation, Dept. of Mater. Eng., The Univ. of Tokyo, ²Dept. of Mater. Eng. The Univ. of Tokyo
- P-25** *Disposable Healthcare Chip Combined with Multi-Item Sensors for Blood Diagnostics*
Madoka Taka[†], Satomi Shinbashi², Hiroki Ogawa², Akio Oki¹, Masao Naga[†] and Yasuhiro Horiike¹
¹Dept. of Mater. Eng., The Univ. of Tokyo, ²Jpn. Science and Tech. Corporation (JST)
- P-26** *Damage Less Cell Sorter Employing Electric Leak Free Electroosmosis Pump*
Hiroyuki Onoda, Yuzuru Takamura, and Yasuhiro Horiike
Dept. Mater. Eng., The Univ. of Tokyo
- P-27** *Micellar Nanoparticles for DNA Delivery*
Yoshinori Kakizawa¹ and Kazunori Kataoka^{1,2}
¹BMC, NIMS, ²Dept. of Mater. Science, Grad. Sch. of Eng., Univ. of Tokyo
- P-28** *Heterobifunctional Poly (ethylene glycol) Tethered Chain Surface for Biosensing*
Katsumi Uchida¹, Yukio Nagasaki¹, Hidenori Otsuka² and Kazunori Kataoka^{2,3}
¹Dept. of Mater. Science, Tokyo Univ. of Science, ²BMC, NIMS, ³Grad. Sch. of Eng., The Univ. of Tokyo
- P-29** *Pegylated Nanoparticles for Biological and Pharmaceutical Applications*
Hidenori Otsuka¹, Yukio Nagasaki² and Kazunori Kataoka^{1,3}
¹BMC, NIMS, ²Dept. of Mater. Science, Tokyo Univ. of Science, ³Dept. of Mater. Science and Eng., Grad. Sch. of Eng., The Univ. of Tokyo
- P-30** *Body Distribution of PEGylated Gelatin Micelles After Intravenous Administration*
Toshihiro Kushibiki, Masaya Yamamoto and Yasuhiko Tabata
Dept. of Biomater., Inst. for Frontier Science, Kyoto Univ.
- P-31** *Liver Targeting of Hepatocyte Growth Factor Gene Prevents The Onset of Fulminant Hepatic Failure in Mice*
Masaya Yamamoto¹, Jun-ichiro Jo¹, Teruyoshi Aoyama², Hossein Hosseinkhani¹, Osamu Ogawa² and Yasuhiko Tabata¹
¹Dept. of Biomater., Inst. for Frontier Medical Sciences, Kyoto Univ., ²Dept. of Urology, Kyoto Univ.
- P-32** *In Vitro Gene Expression by Cationized Derivatives of an Artificial Protein with Repeated RGD Sequences, Pronectin*
Hossein Hosseinkhani and Yasuhiko Tabata
Dept. of Biomater., Field of Tissue Eng., Inst. for Frontier Medical Sciences, Kyoto Univ.
- P-33** *On-Off Control of Cell Adhesion with Thermo-Responsive Nano-Structures*
Mitsuhiro Ebara¹, Masayuki Yamato², Takao Aoyagi², Akihiko Kikuchi², Kiyotaka Sakai¹ and Teruo Okano²
¹Dept. of Applied Chem., Waseda Univ., ²Inst. of Advanced Biomed. Eng. and Science
- P-34** *Nano-Scale Thick-Patterned Thermo-Responsive Surfaces for Pattern Co-Cultured Cell Sheet Engineering*
Yukiko Tsuda¹, Akihiko Kikuchi², Masayuki Yamato², Yasuhisa Sakura[†], Teruo Okano²
¹Grad. Sch. of Science & Eng., Waseda Univ., ²Inst Adv Biomed Eng & Sci, Tokyo Women's Medical Univ.
- P-35** *Tendon Chitosan Tubes Covalently Coupled with Synthesized Laminin Peptides Facilitate Nerve Regeneration in Vivo*
Soichiro Itoh¹, Isamu Yamaguchi², Kazuo Takakuda³, Hisatoshi Kobayashi⁴, Kenichi Shinomiya⁵ and Junzo Tanaka⁴
¹Division of Molecular Tissue Eng., ²Taki Chemical Co., Tokyo Medical and Dental Univ., ³Dept. of Biomech. Eng., Tokyo Medical and Dental Univ., ⁴NIMS, BMC, ⁵Orthopaedic and Spinal Surgery, Tokyo Medical and Dental Univ.
- P-36** *Time Course of Ectopic Calcification with BMP-2-Derived Peptide-Conjugated Alginate Gel*
Atsuhiko Saito¹, Yoshihisa Suzuki², Shin-ichi Ogata¹, Chikara Ohtsuki¹, Masao Tanihara¹, Shingo Masuda³ and Akira Fujisawa³
¹Grad. Sch. of Mater. Science, NARA Inst. of Science and Tech., ²Dept. of Plastic and Reconstructive Surgery, Section of Surgery for Sensory and Motor System, Division of Surgery, Kyoto Univ. Grad. Sch. of Medical, ³Mater. and Process Research Section, Bioceram Devison, Kyosera Corporation
- P-37** *Healing Process of a Tendon-Bone Tunnel Interface: Using a Calcium Phosphate*

Hybridization Method

Hiroataka Mutsuzaki¹, Masataka Sakane¹, Yasuhiko Watanabe¹, Yutaka Miyanaga¹, Naoyuki Ochiai¹, Hiromi Nakajima², Shinya Hattori² and Junzo Tanaka³
¹Univ. of Tsukuba, ²Ibaraki Prefectural Univ., ³BMC, NIMS

P-38 *Phosphoryn-Collagen Sponge as a Bone Regeneration Scaffold*

D. Iejima¹, T. Saito², T. Uemura³ and T. Tateishi⁴
¹Univ of Tsukuba, ²Health Science Univ. Hokkaido, ³TERC, AIST, ⁴Univ. Tokyo

P-39 *TCP/PLGC Composites as The Bone Induced Membranes*

Kazumi Akita¹, Noriaki Shirahama², Masanori Kikuchi³, Yoshihisa Koyama⁴, Kazuo Takakuda⁴ and Junzo Tanaka³
¹Kawasumi Biosci. Laboratories., Inc, ²Kawasumi Laboratories, Inc, ³BMC, NIMS, ⁴Inst. for Medical and Dental Eng., Tokyo Medical and Dental Univ.

P-40 *Porous Body Using Self-Organized Apatite/Collagen Composite Fibrils*

Daisuke Syoji¹, Masanori Kikuchi², Junzo Tanaka², Shinichi Sotome³, Soichiro Ito³ and Kenichi Shinomiya³
¹Pentax Co., Ltd., ²BMC, NIMS, ³Tokyo Medical and Dental Univ.

P-41 *Nano Hydroxyapatite/Nylon Composite Micro Beads for Detction of Virus Antibodies*

Yae Kurosawa¹, Akira Yamamoto¹, Mikio Nakayama², Kikuka Kishiro¹, Ken Sugo¹, Masato Tashiro², Tetsuro Ogawa¹ and Ichiro Kurane²
¹New Ceramics Division, PENTAX Corporation, ²Dept. of Virology 1, National Inst. of Infectious Diseases

P-42 *Nano Hydroxyapatite Ceramic Beads for Separation of Biological Macro Molecules*

Tetsuro Ogawa, Akira Yamamoto, Yae Kurosawa, and Shintaro Kobayashi
New Ceramics Division, PENTAX Corporation

P-43 *Effect of Anionic Group Content on Apatite Deposition in Simulated Body Environment*

Takahiro Kawa¹, Chikara Ohtsuki¹, Toshiki Miyazaki², Masao Tanihara¹, Junko Nakao³, Yoshimitsu Sakaguchi³ and Shigeji Konagaya³
¹Grad. Sch. of Mater. Science, Nara Inst. of Science and Tech, ²Grad. Sch. of Life Science and Systems Eng., Kyushu Inst. of Tech, ³Toyobo Research Center Co., Ltd.

P-44 *Fabrication of Hydroxyapatite Sintered Body with C-Axis Orientation*

Kazushi Ohta¹, Masanori Kikuchi², Junzo Tanaka² and Hiroshi Eda³
¹Satellite Venture Business Lab, Ibaraki Univ., ²BMC, NIMS, ³Dept. of System Eng., Ibaraki Univ.

P-45 *Control of Polyethylene Glycol Adsorption to Titanium with Surface Treatment*

Shinji Takemoto and Takao Hanawa
BMC, NIMS

P-46 *Observation of Cell-Material Interface at Cell Detachment by Interference Reflection Microscopy*

Akiko Yamamoto, Yuko Kohyama, Harumi Sakamoto, and Takao Hanawa
BMC, NIMS

P-47 *MEMS Technology Towards in Vitro Tissues Reconstruction*

Eric Leclerc¹, Serge Ostrovidov¹, Yasuyuki Saka² and Teruo Fujii²
¹LIMMS/CNRS IIS Univ. of Tokyo, ²IIS, Univ. of Tokyo

P-48 *Lipid Nanotube Engineering : Neuron - Inspired Nanotube and Liposome Network*

Shin-ichiro M. Nomura, Kazunari Akiyoshi
Institute of Biomaterials and Bioengineering, Tokyo Medical and Dental Univ.

P-49 *Field-Effect Flow Induced via Self-Assembled Monolayer for Microfluidic Control of Microchip*

Ching-Chou Wu, Ren-Guen Wu, Hsien-Chang Chang
Inst. of Biomed. Eng., National Cheng-Kung Univ.

POSTER PRESENTATION

Posters should be presented onto the poster board (W90 x H150 cm) at your poster number **before 9:00 on Sunday morning**. Poster preparation is also available during the *Welcome Party* at Saturday night. The posters should be removed before 15:30 of Monday; remains will be discarded by the organizing committee.

Authors will have one-minute oral presentation during the *Oral Poster Session* (Sunday, 11:40-12:40). OHP is an only acceptable media for the session. To be qualified for the FNB 2003 Poster Award, your oral presentation should be finished **within one minute**. The authors are also required to attend the presentation ceremony at the closing remark.

SATELLITE MEETING

Second annual meeting of the Japanese society for regenerative medicine
March 11-12, 2003, PORTPIA HOTEL, Kobe, Japan.

(Secretariat) Dr. Jun Miyake

Phone: +81-6-6494-7803

Fax: +81-6-6494-7862

e-mail: jun-miyake@aist.go.jp

URL: <http://www.soc.nii.ac.jp/jsrm/>

GENERAL INFORMATION

Symposium Venue

Tsukuba International Congress Center (EPOCHAL TSUKUBA)
2-20-3 Takezono, Tsukuba, Ibaraki 305-0032, Japan
Phone: +81-29-861-0001, Fax: +81-29-861-1209
URL: <http://www.epochal.or.jp/english/index.html>

Official Language

English

Social Programs

Welcome Reception

March 8, 2003, 18:00 -
Espoir (inside the Epochal Tsukuba)
Phone: +81-29-850-3266

Banquet

March 9, 2003, 18:30 -
Okura Frontier Hotel Tsukuba
Phone: +81-29-852-1112
Fee 5,000 yen (Student 1,000 yen)

Okura Frontier Hotel Tsukuba is about 12 min. walk from the Epochal Tsukuba. A symposium free bus service will be available from the main entrance of Epochal Tsukuba at 18:00 on Sunday night.

Accommodation

Blocks of rooms in nearby hotels (Okura Frontier Hotel Tsukuba and Hotel Grand Shinonome) are reserved at discount rates by the Conference Secretary. Both of them are located within a walking distance from the conference venue. Those who would like to stay in these rooms might contact before January 31, 2003 to conference secretariat.

Room Charge

(Tax and service charge are included)

	Okura Frontier Hotel Tsukuba	Hotel Grand Shinonome
URL	http://www.okura-tsukuba.co.jp	http://www.hg-shinonome.co.jp
Single	10,500 yen	7,350 yen
Twin	18,900 yen	-

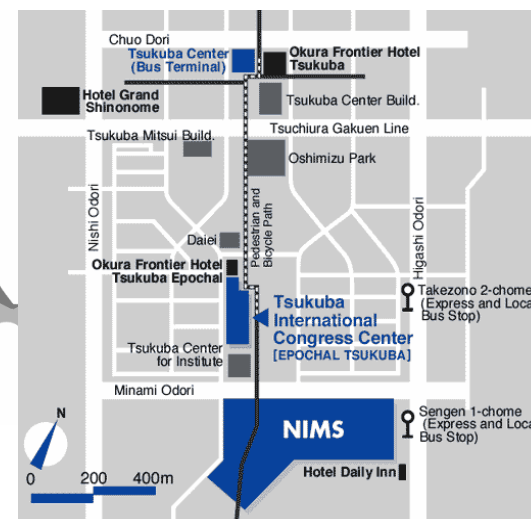
Access for conference venue

From Tokyo

Tokyo Stn. Yaesu South ext. --- (Joban highway bus) --- Tsukuba Center --- (by walk) --- Epochal Tsukuba (80min, 1250 yen)
JR Ueno Stn. --- (JR Joban Line) --- Hitachino-ushiku Stn. --- (Bus) --- Tsukuba Center --- (by walk) --- Epochal Tsukuba (100min, 1,470 yen)

From Narita Airport

Narita Airport --- (Airport Liner NATT's) --- Tsukuba Center --- (by walk) --- Epochal Tsukuba (110min, 2,520 yen)



Dr. Takao HANAWA,
Nanotechnology Researchers Network Center
of Japan

Toranomon 30 Mori Building 2F,
3-2-2 Toranomon, Minato-ku,
Tokyo, 105-0001, JAPAN
Phone: +81- 3-5404-3298
Fax: +81-3-5404-3290
e-mail: HANAWA.Takao@nims.go.jp
URL: <http://www.nanonet.go.jp/>