

**US-Japan Symposium on
Nanotechnology in Advanced Therapy and Diagnosis**

October 9-11, 2003

Yokohama Prince Hotel in Isogo, Yokohama

Program

Thursday, October 9, 2003

18:30-21:00 Reception: Room Kiku-no-Ma

Friday, October 10, 2003

7:00-9:00 Breakfast: Buffet restaurant "Patio"(1F)/Japanese restaurant "Isogo"(B1F)

9:30-10:00 Opening Addresses: Room Matsu-no-Ma

Chair: Dr. Norio Shinya Deputy Director, Nanotechnology Researchers Network Center
Mr. A. Ishikawa Director-General, The Research Promotion Bureau, MEXT
Mr. Martin Murphy Deputy Minister-Counselor for EST, U.S. Embassy
Prof. Maruo Ferrari The Ohio State University
Prof. Kazunori Kataoka The University of Tokyo

Nanotechnology for medical therapeutics

Chair: Prof. Jean Frechet & Prof. Mitsuru Akashi

10:00-10:25 Prof. Mauro Ferrari The Ohio State University
The Cancer Nanotechnology Plan

10:25-10:50 Prof. Kazunori Kataoka The University of Tokyo
Smart polymeric micelles as nanocarriers for gene and drug delivery

10:50-11:15 Prof. James Lee The Ohio State University
Particulate-like Nanoporous Microdevices for Drug Delivery Applications

11:15-11:40 Prof. Mitsuru Akashi Osaka University
Core-Corona Type Polymeric Nanospheres: Synthesis, Characterization and Application for AIDS Vaccine

11:40-12:05 Prof. Jean Frechet University of California, Berkeley
Novel micro- and nanoparticulate delivery of vaccines

12:05-13:30 Lunch

Chair: Prof. Kam Leong & Prof. Yasuhiko Tabata

13:30-13:55 Prof. Akio Kishida National Cardiovascular Center
Research Institute
Application of Organic and Inorganic Nanoparticle for Cardiovascular Tissue Engineering Research Institute

13:55-14:20 Dr. Michael Sprintz The Ohio State University
Nanoengineered Device for the Oral Transmucosal Delivery of Opiate Analgesia

14:20-14:45 Prof. Kam Leong The Johns Hopkins School of Medicine
Polymer-DNA Nanoparticles for Nonviral Gene Delivery

14:45-15:10 Prof. Yasuhiko Tabata Kyoto University

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*Medical and Biological Applications of Gelatin and Fullerene
Nanomedicines*

15:10-15:30 Break

Nanotechnology for medical diagnostics

Chair: Prof. Rashid Bashir & Prof. Mizuo Maeda

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|-------------|--|---|
| 15:30-15:55 | Prof. Mizuo Maeda | RIKEN |
| | <i>Reliable Genotyping Using DNA-Conjugate Nanomaterials</i> | |
| 15:55-16:20 | Prof. Marianne Manchester | The Scripps Research Institute |
| | <i>Virus-based nanoparticles: Novel biosensors for targeting cancer</i> | |
| 16:20-16:45 | Prof. Tadashi Matsunaga | Tokyo University of Agriculture
& Technology |
| | <i>Potential of nano-sized bacterial magnetic particles for medical applications</i> | |
| 16:45-17:10 | Prof. Martin Philbert | University of Michigan |
| | <i>Nanoscale Sensors for Intracellular Measurement and the Early Detection and Treatment of Cancer</i> | |

Poster Session & Drink: Room Kiku-no-Ma

17:30-18:30

Banquet: Room Kiku-no-Ma

18:30-20:30

Saturday, October 11, 2003

7:00-9:00 Breakfast: Buffet restaurant "Patio"(1F)/Japanese restaurant "Isogo"(B1F)

Nanotechnology for medical diagnostics

Chair: Prof. Martin Philbert & Prof. Yasuhiro Horiike

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|-------------|---|--|
| 9:30-9:55 | Prof. Kazuko Matsumoto | Waseda University |
| | <i>Florescent Lanthanide Chelates for Diagnostics and Biotechnology</i> | |
| 9:55-10:20 | Prof. King Li, M.D. | National Institute of Health |
| | <i>Molecular Imaging: Opportunities and Challenges for Nanotechnology</i> | |
| 10:20-10:45 | Prof. Yasuhiro Horiike | National Institute for Materials Science |
| | <i>Development of Biochips employing micro-nano Fabrication Technologies</i> | |
| 10:45-11:10 | Prof. Rashid Bashir | Purdue University |
| | <i>Biochips and Integrated Systems for the Rapid Detection and Analysis of Cells and Microorganisms</i> | |

11:10-11:30 Break

Nanotechnology for fundamental life and medical science

Chair: Prof. Mark Bednarski & Prof. Takashi Funatsu

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11:30-11:55 Prof. Scott Collins University of Maine
Biomolecular Characterization and Analysis

11:55-12:20 Dr. David Geho National Cancer Institute
*Integrating Proteomics and Nanotechnology for Diagnostic and
Therapeutic Applications*

12:20-14:00 Lunch

Chair: Prof. Scott Collins & Prof. Teruo Okano

14:00-14:25 Prof. Mark Bednarski Stanford University School of
Medicine
*Self-Assembled Polymerized Diacetylene Films: Nanomaterials for
Ligand Display at Interfaces*

14:25-14:50 Prof. Teruo Okano Tokyo Women's Medical University
Bio-nano-Designed Surface for Regenerative Medicine

14:50-15:15 Prof. Mihrimah Ozkan University of California,
Reverside
Micro- and Nano- Scale Techniques for Bio-chemical Detection

15:15-15:40 Prof. Kazunari Taira The University of
Tokyo
It's a small RNA world that revolutionizes the bio-medical field

15:40-16:00 Break

Chair: Prof. Adam Woolley & Prof. Kazunori Taira

16:00-16:25 Prof. Adam Woolley Brigham Young University
*DNA-templated nanofabrication: integration of synthetic
nanotechnology with biology*

16:25-16:50 Prof. Takashi Funatsu Waseda
University
*Single Molecule Imaging of Biological Functions and Handling of
Biomolecules in Micro Channels*

16:50-17:15 Prof. Taro Uyeda
AIST
Nanobiotechnological Application of Protein Molecular Motors

17:15-17:50 Discussion

17:50-18:15 Closing Remarks

Prof. Teruo Kishi President, National Institute for Materials Science
Director General, Nanotechnology Researchers Center of Japan

Prof. Mihail Roco Senior Advisor for Nanotechnology NSF
Chair, National Nanotechnology

Initiative

Mr. Tsuyoshi Maruyama Deputy Director-General,

MEXT

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19:00-21:00 Dinner: China town in Yamashita-cho

Poster Session

- PS1** Structural transformation of plasmid DNAs induced by a PEG-PLL block copolymer;
Regularly fragmentation by S1 nuclease
Kensuke Osada The University of Tokyo
- PS2** Novel dendritic photosensitizers for photodynamic therapy
Woo-Dong Jang The University of Tokyo
- PS3** Organic-inorganic hybrid micelles for DNA/siRNA delivery
Yoshinori Kakizawa National Institute for Materials Science
- PS4** Preparation of PVA nano-particles using ultra-high pressure technology
for drug carrier
Tsuyoshi Kimura National Cardiovascular Center Research Institute
- PS5** Nano-ceramics hybrid: Development of hydroxyapatite-silk fiber composite
for percutaneous device
Tsutomu Furuzono National Cardiovascular Center Research Institute
- PS6** Nano-tissue engineering utilizing intelligent materials
Masayuki Yamato Tokyo Women's Medical University
- PS7** Assembling of G protein-coupled receptors onto nano-sized bacterial magnetic
particles through genetic engineering
Tomoko Yoshino Tokyo University of Agriculture and Technology
- PS8** A novel biomolecule sorter using thermosensitive hydrogel in micro flow system
Yoshitaka Shirasaki Waseda University
- PS9** DNA analysis using nanoparticle containing lanthanide fluorescence complexes
Takuya Nishioka Waseda University
- PS10** Imaging of single collagen molecule by scanning tunneling microscopy
Akira Hida Tokyo Institute of Technology
- PS11** Development of a novel cell array by utilizing bio-nano interfaces
Yoshikatsu Akiyama Tokyo Women's Medical University
- PS12** Nanometer-thick patterned dual thermo-responsive surfaces
for heterotypic cell sheet engineering
Akihiko Kikuchi Tokyo Women's Medical University