

# Sweden-Japan Workshop on Bionanotechnology

November 9-13, 2003

Kyoto Kokusai Hotel in Kyoto

## *Program*

### **Sunday, November 9, 2003**

**18:30-20:30 Reception: Room Crystal**

### **Monday, November 10, 2003**

**7:00-9:00 Breakfast**

#### **9:00-9:30 Opening Addresses**

**Chair: Dr. Norio Shinya** Deputy Director, Nanotechnology Researchers Network Center  
Mr. Shinichi Mizumoto Deputy Director, Office for Materials Research  
and Development, MEXT  
Mr. Anders Sjölund Head of Planning, Scientific Secretary, Materials Science  
and Microelectronics, SSF  
Prof. Olle Inganäs Linköping University  
Prof. Masuo Aizawa President, Tokyo Institute of Technology

#### **9:30-10:15 Keynote Lecture**

Prof. Masuo Aizawa President, Tokyo Institute of Technology  
*Bio-Nanotechnology Progress in Japan*

### **Nanoscience and Nanotechnology for Biotechnology**

**Chair: Prof. Takehiko Kitamori**

10:15-10:45 Prof. Lars Montelius Lund Institute of Technology  
*Bringing nanotechnology to life sciences*  
10:45-11:15 Prof. Masahiko Hara Tokyo Institute of Technology  
*Self-Assembled Monolayer and Single Molecular Detection*  
11:15-11:45 Prof. Bengt Kasemo Chalmers University of Technology  
*Nano-and microfabricated surfaces for control and diagnostics of  
biointerfaces intact vesicles*  
11:45-12:15 Prof. Stefan Löfås VP, CSO, Biacore AB  
*Nanoscale chemistries and SPR analysis for life science and drug  
discovery applications*

#### **12:15-13:15 Lunch: Room Crystal**

**Chair: Prof. Bengt Kasemo**

13:15-13:45 Prof. Fredrik Höök Chalmers University of Technology  
*From the use of the QCM-D technique for biorecognition detection  
towards spatially controlled immobilization of intact vesicles*  
13:45-14:15 Prof. Takehiko Kitamori The University of Tokyo

*Creation and Applications of Nano Bio-Physico-Chemical  
Architecture*

14:15-14:45 Prof. Hideaki Matsuoka Tokyo University of Agriculture and  
Technology

*Single ES Cell Manipulation Supporting Robot*

**14:45-15:00 Break**

**Biomedical Application**

**Chair: Prof. Mamoun Muhammed & Prof. Taizo Uda**

15:00-15:30 Prof. Kazunori Kataoka The University of Tokyo  
*Smart polymeric micelles as nanocarriers for gene and drug  
delivery*

15:30-16:00 Prof. Mamoun Muhammed Royal Institute of Technology  
*Engineering of Magnetic Nanoparticles for Biomedical  
Applications*

16:00-16:30 Prof. Mitsuru Akashi Osaka University  
*AIDS Vaccine: Intranasal Immunization with Inactivated HIV-1  
Capturing Core-Corona Type Polymeric Nanospheres*

16:30-17:00 Prof. Ove Öhman Åmic AB  
*Replicated polymers systems in Biotech and Diagnostic  
Applications*

17:00-17:30 Prof. Teruo Okano Tokyo Women's Medical University  
*Intelligent Biointerface for Tissue and Organ Regeneration*

17:30-18:00 Prof. Taizo Uda Hiroshima Prefectural University  
*Some unique characteristics of "Super Catalytic  
Antibody"(Antigenase)*

**Poster Session & Drink: Room Crystal**

18:15-18:45

**Banquet: Room Crystal**

18:45-21:00

**Tuesday, November 11, 2003**

**7:00-8:30 Breakfast**

**Nanobioelectronics and Computing**

**Chair: Prof. Magnus Berggren**

8:30-9:00 Prof. Olle Inganäs Linköping University  
*Bioelectronics with flexible electronic reporters*

9:00-9:30 Prof. Yoshio Okahata Tokyo Institute of Technology  
*Preparation of a DNA-aligned Film and its Application for  
Electronic Device*

9:30-10:00 Prof. Tomoji Kawai Osaka University  
*DNA based electronic and magnetic devices*

10:00-10:30 Dr. Chikara Manabe Fuji Xerox Co., Ltd.  
*Electric devices using DNA molecules*

**10:30-10:50 Break**

**Chair: Prof. Yoshio Okahata**

10:50-11:20 Prof. Magnus Berggren Linköping University  
*Water, ions and electrons as signal carriers in organic electronic devices*

11:20-11:50 Dr. Keiichi Torimitsu NTT Basic Research Laboratories  
*Neural Functions and Nano-Bio Device*

11:50-12:20 Prof. Goran Wendin Chalmers University of Technology and Göteborg University  
*Molecular networks for neuromorphic computing*

**12:20-13:30 Lunch: Room Crystal**

**Biomimetics**

**Chair: Prof. Goran Wendin**

13:30-14:00 Prof. Bo Liedberg Linköping University  
*Mimicking Macromolecular Structure and Function:  
From Receptor Design to Anti-Freeze Materials*

14:00-14:30 Dr. Ichiro Yamashita Matsushita Electric Industrial Co.,Ltd  
*Biomimetic Nanostructure Fabrication*

**Proteomics and Detection**

**Chair: Prof. Jerker Widengren**

14:30-15:00 Dr. Shozo Fujita Fujitsu Laboratories, Ltd.  
*Protein Detection by Nanowire Transducer System*

15:00-15:30 Prof. Ulf Landegren Uppsala University  
*Molecular Tools for the Postgenomic Era*

**15:30-16:00 Break**

**Chair: Dr. Shozo Fujita**

16:00-16:30 Prof. Jerker Widengren Royal Institute of Technology  
*Detection, identification and conformational dynamic  
characterization of single molecules by ultrasensitive fluorescence  
spectroscopy techniques*

16:30-17:00 Prof. Carl Borrebaeck Lund Institute of  
Technology  
*Antibody microarrays - developing a tool for high-throughput  
proteomics*

17:00-17:30 Prof. Thomas Laurell Lund Institute of Technology  
*Microfluidics for nanoproteomic sample processing and on-chip  
cell/particle handling*

**17:30-18:00 Discussion**

**18:45-21:00 Dinner: Room Goten no Ma at Hotel Fujita**

## **Wednesday, November 12, 2003**

**7:00-8:00 Breakfast**

### **Site Tour in Kansai area**

8:30 Departure:  
Kyoto Kokusai Hotel by bus  
10:30-11:40 Advanced Technology Research Laboratories,  
Matsushita Electric Industrial Co., Ltd., Nara  
11:40 Departure:  
Advanced Technology Research Laboratories,  
Matsushita Electric Industrial Co., Ltd., Nara  
12:00-12:30 Nara Institute of Science and Technology  
12:30 Departure:  
Nara Institute of Science and Technology

### **12:30-14:15 Lunch on the bus**

14:15-16:15 The Institute of Scientific and Industrial Research, Osaka University  
16:15 Departure:  
Osaka University  
17:30 Departure:  
Shin Osaka Station (by Shinkansen : Nozomi 144)  
20:06 Arrival: Tokyo Station

## **Thursday, November 13, 2003**

**7:00-8:00 Breakfast**

### **Site Tour in Kanto area**

8:00 Departure:  
Hotel Okura  
9:20-12:00 Nano Science Joint Laboratory, RIKEN, Wako-city

### **12:00-13:00 Lunch at RIKEN, Wako-city**

13:00 Departure:  
Nano Science Joint Laboratory, RIKEN, Wako-city  
14:30-17:00 Tokyo Institute of Technology, Ookayama

**17:00 –19:00 Banquet at The Centennial Hall, Tokyo Institute of Technology,  
Ookayama**