The First Symposium of Nanotechnology Excellence, Nihon University 2009
—Nanomaterial-based Photonic, Quantum and Bio Technologies—

18 September 2009

Research Center Hall, Nihon University School of Medicine, Itabashi, Tokyo

Nihon University "*N.*" Research Project "Nanotechnology Excellence, Nihon University —Nanomaterial-based Photonic, Quantum and Bio Technologies—" has started this year 2009. The "*N.*" Research Project, crowned with "*N.*" symbolizing Nihon University, aims at realizing healthy future through interdisciplinary, intercollege collaboration in Nihon University, the largest private university in Japan. This project will develop technologies in the areas of information, energy, and medicine on the basis of nanoscience and nanotechnology to contribute to solving various problems the society faces.

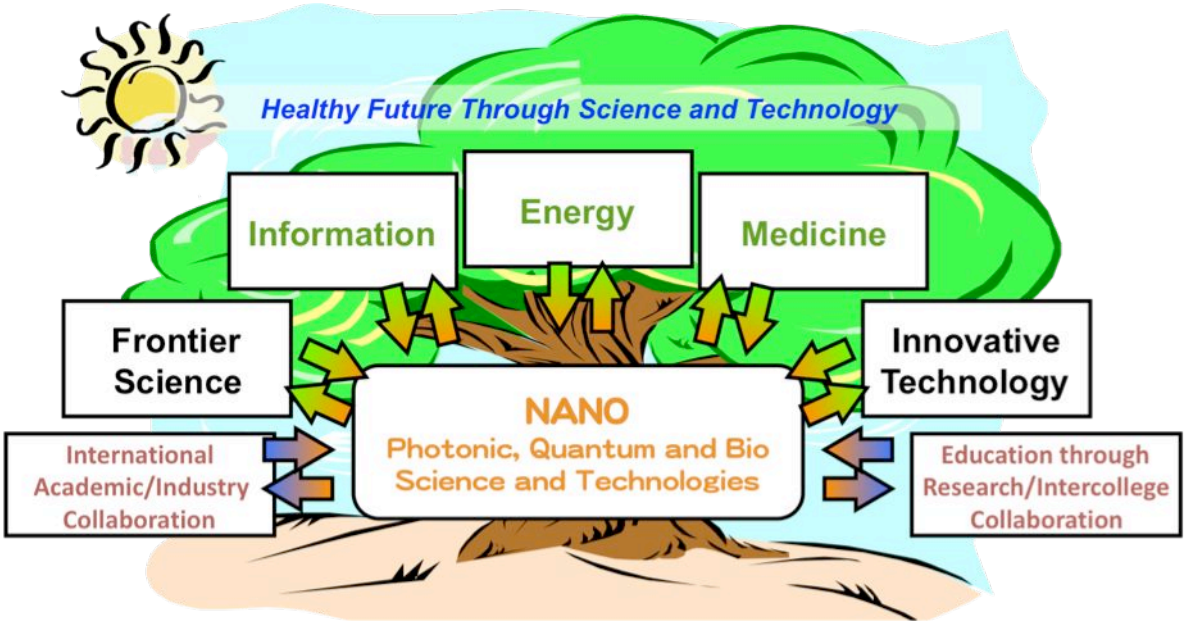
Scope of the Symposium

In the symposium, the members of the project present their recent results to stimulate discussions in the areas of:

- ***Information:*** Superhigh speed recording, superhigh density recording, quantum information, etc.
- ***Energy:*** Solar energy conversion, hydrogen storage, fuel cells, etc.
- ***Medicine:*** DNA recognition, photodynamic therapy, etc.
- ***Nanoscience and Nanotechnology:*** Self-assembly, nanomaterials and nanomanipulation, quantum mechanics theory, etc.

Guest Speakers

- **Prof. Hironori Arakawa** (Tokyo University of Science)
- **Prof. Ravindra K. Pandey** (Roswell Park Cancer Institute)

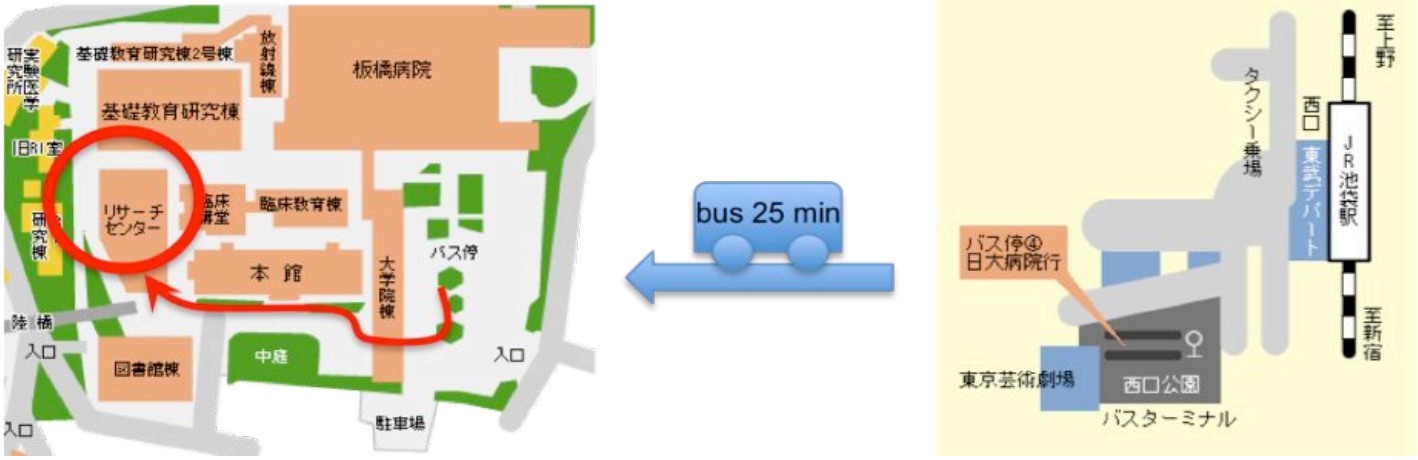


Participation

We welcome anyone interested. We would appreciate your preregistration, although participation without registration is also welcome. For registration, just e-mail to the contact address with your name, affiliation, position, e-mail, and whether or not you join “banquet & poster” session. The participation is free of charge except for the “banquet & poster” (2,000 yen; free for students).

Location	Research Center Hall, Nihon University School of Medicine

30-1 Oyaguchi Kamicho, Itabashi, Tokyo 173-8610
25 minutes by bus bound for “Nichidai Byoin” from the west gate of JR Ikebukuro station



Info	http://www.med.nihon-u.ac.jp/department/cancer/Nproject21E.html
contact	Joe Otsuki: otsuki@chem.cst.nihon-u.ac.jp

Notes

Oral presentation

We recommend to use your own PC/Mac for presentation to avoid unpredictable troubles.
Keep a backup copy of your slides on a USB memory stick, just in case.

Poster presentation

The width of the poster should be equal to or less than 841 mm (A0).
The height of the poster may be up to 190 cm.
The poster will be put on the wall with double-sided adhesive tape, which we will supply.
We recommend to put your poster before the opening of the symposium (10:00 am).
All poster will be being displayed throughout the day.

Program		
10:00	• *The Nihon University "N." Research Project*	Joe Otsuki
10:30	*Information Technologies* • *Quantum Information Processing* • *Information Storage*	 Shuichiro Inoue Katsuji Nakagawa
11:30	<Coffee break>	
11:40	• *Energy Technologies* •Highly Efficient Plastic-Substrate Dye-Sensitized Solar Cells Prepared by Press Method	Yasuo Asada INVITED: Hironori Arakawa
12:50	< Lunch & Poster>	
14:30	*Medical technologies* • Multifunctional Agents for Tumor Imaging and Therapy • Strategy for the Drug-Discovery of Pyrrole-Imidazole (PI Polyamides to Human Diseases • Application of Parametric Monochromatic X-Rays to Photodynamic Therapy (PDT)	 INVITED: Ravindra K. Pandey Noboru Fukuda Hiroki Nagase
15:50	<Coffee break>	
16:10	*Nanoscience & Nanotechnologies* • *Nanomaterials and Nanodevices* • *Supramolecules and Self-Assembly* • *Quantum Theory and Computation*	 Kaoru Suzuki Hiroki Ikake Tokuei Sako
17:40	Reviewing remarks	Advisory Board Members
18:00	<Banquet & Poster>	

Abstracts for Oral Presentations

O1	The Nihon University "*N.*" Research Project **Joe Otsuki**
O2 O3	Quantum Information Processing and Information Storage Group **Shuichiro Inoue, Katsuji Nakagawa, Akiyoshi Itoh, Arata Tsukamoto, Takeshi Kuwamoto, Hideomi Hashiba**
O4	The Energy Group **Joe Otsuki, Sachiko Matsushita, Takuya Hashimoto, Nobuyuki Nishimura, Yasuo Asada**
O5	Highly Efficient Plastic-Substrate Dye-Sensitized Solar Cells Prepared by Press Method **Hironori Arakawa**
O6	Multifunctional Agents for Tumor Imaging and Therapy **Ravindra K. Pandey**
O7	Strategy for the Drug-Discovery of Pyrrole-Imidazole (PI) Polyamides to Human Diseases **Noboru Fukuda**
O8	Application of Parametric Monochromatic X-Rays to Photodynamic Therapy (PDT) **Naoya Ishibashi, Hiroki Nagase, Tsutomu Saito, Isamu Sato, Satoru Takahashi, Motoichiro Takahashi**
O9	Nanomaterials and Nanodevices Group **Kaoru Suzuki, Yoshiki Takano, Tomohiko Asai, Nobuyuki Iwata, Hideomi Hashiba, Takuya Hashimoto, Shigeru Chaen, Shosuke Mochizuki**
O10	Supramolecules and Self-Assembly Group **Hiroki Ikake, Akiyoshi Itoh, Joe Otsuki, Arata Tsukamoto, Sachiko Matsushita**
O11	Quantum Theory and Computation Group **Hiroshi Ishida, Shinichiro Ohnuki, Tokuei Sako, Kazuo Fujikawa, Tsuneki Yamasaki**

Abstracts for Poster Presentations

P1	Directed Single Photon Emission from CdSe Quantum Dots by TiO_2 Photonic Crystals **Kazuaki Tawaraya, Kumiko Sashida, Chisato Sakuma, Hideomi Hashiba**
P2	Fabrication of Multi-Layered Absorption Structure for High Quantum Efficiency Photon-Number-Resolving Detectors **Go Fujii, Shuichiro Inoue**
P3	Narrow-Band, Polarization Entangled Photon Pairs in Telecommunication Band from a Type-II Periodically Poled Lithium Niobate Adhered-Ridge-Waveguide **Naoto Namekata, Shuichiro Inoue**
P4	Ultra High Density Information Recording Materials on Self Assembly Nano-Structured Substrates **Akiyoshi Itoh**
P5	Optical Dipole Force Trap of a Rubidium 87 Bose-Einstein Condensate --Toward Realization of Effective Quantum Memory-- **Takeshi Kuwamoto, Hitoshi Shibayama, Yuzuru Yasaku**

P6	Experimental Study of Electromagnetically Induced Transparency in Rubidium 87 **Masashi Ishimaru, Kazuya Matsumoto, Takeshi Kuwamoto**
P7	Second Harmonic Generation of a 795-nm Wavelength Laser Resonant with D1 Transition in a Rubidium 87 **Daisuke Kuniyoshi, Shingo Uesono, Takeshi Kuwamoto**
P8	Thermally Assisted Recording with Optical Near Field Antenna **Katsuji Nakagawa**
P9	Ultra Fast Information Recording by Ultra Fast Photo Magnetic Switching **Arata Tsukamoto**
P10	Asymmetric Reduction of Phenyl-Ketones by a Photosynthetic Bacterium *Rhodopseudomonas palustris* No.7 **Yasuo Asada, Ken-ichi Itoh, Katsuhiro Ishimi, Shuhei Tamayama, Hideki Kohno**
P11	Preparation of Functional Oxides with High Uniformity in Nanoscale **Fumito Fujishiro, Takuya Hashimoto**
P12	Dye-Sensitized Photonic-Crystal Electrodes **Sachiko Matsushita**
P13	PI Polyamide RNA Recognition **Akifumi Iguchi, Kazufumi Shimizu, Teruyuki Takahashi, Noboru Fukuda**
P14	Actin Cytoskeleton and Extracellular Matrix Remodeling during Early Adipocyte Differentiation **Hiroyuki Nobusue, Yoshinao Oki, Yuko Sumikawa, Koichiro Kano**
P15	Potential of New Therapeutic and Diagnostic Technology Using PI Polyamide and Nano Structure in Neuroblastoma **Takeshi Kusafuka**
P16	Optimization and Validation of High-Performance Liquid Chromatographic Assay with UV Detection for Determination of Pyrrole-Imidazole Polyamides in Rat Plasma **Yoshiaki Matsumoto, Takahiko Aoyama**
P17	Regulation of the c-MYC Down-Stream Genes Using Pyrrole-Imidazole (Py-Im) Polyamides **Mishra Rajeev, Makoto Kimura, Noboru Fukuda, Takeshi Kusafuka, Hiroki Nagase**
P18	Targeted Chromatin Modification Mediated by Pyrrole-Imidazole Polyamide to Control Gene Expression for Cancer Therapy **Makoto T. Kimura, Maki Ikeda, Takayoshi Watanabe, Asako Oguni, Tsukasa Suzuki, Toshikazu Bando, Akimichi Ohtsuki, Hiroshi Sugiyama, Hiroki Nagase**
P19	Close Relationship between Stromal Adipocytes and Parenchyma at Development of the Mammary Gland **Koichiro Kano, Yuko Sumikawa, Hiroyuki Nobusue, Hiroki Nagase**
P20	Pyrrole-Imidazole (Py-Im) Polyamides Target Human Matrix Metalloproteinase-9 (MMP-9) Decreased the Liver Metastasis in an Experimental Metastasis Model **Xiaofei Wang, Hiroki Nagase**
P21	Pyrrole-Imidazole Polyamide Targeting Lectin -like Oxidized LDL Receptor 1 Gene **Takahiro Ueno, Noboru Fukuda, Yoshiaki Matsumoto, Tatsuya Sawamura, Hiroshi Sugiyama, Hiroki Nagase**
P22	Solid-Phase Block Synthesis of the PI Polyamide Using a New Chemical Matrix Resin **Takayoshi Watanabe**

P23	Development of Hairpin Polyamides for an Early Diagnosis Cancer Marker Using New FRET System **Kazuya Suwa, Joe Otsuki, Hiroki Nagase, Takayoshi Watanabe**
P24	Analysis of Conformation and Morphology of Polymers by Small-Angle X-Ray Scattering **Yoshio Muroga**
P25	Energy Barriers for Sliding Movement of Actin Filament along Bipolar Tracks of Myosin Thick Filament **Shigeru Chaen**
P26	Development of Synthesis Method of Nano-Scale Field Effect Transistor Using Single-Walled Carbon Nanotube and C_{60} **Nobuyuki Iwata**
P27	Intrinsic and Defect-Related Luminescence of NiO Single Crystal and Nanocrystals **Takashi Saito, Shosuke Mochizuki**
P28	The Optical Properties and Photo-Induced Spectral Change in the Oxygen Storage Materials: Pristine CeO_2 and $(x)CeO_2$-$(1-x)ZrO_2$ Solid Solution **Shosuke Mochizuki**
P29	A Wide Variety of Application of Magnetized Plasmoid **Hirotomo Itagaki, Kaori Kishi, Tomohiko Asai, Kaoru Suzuki, Nobuyuki Nishimiya**
P30	Metal Complex Based Functional Nanomolecular Systems **Joe Otsuki**
P31	Synthesis of Nano-Rod Devices with Wide Band Gap Semiconductor Effect **Kaoru Suzuki**
P32	Mechanism of Superconductivity in Layered Iron-Arsenide Superconductors and Search of New Superconducting Compounds **Yoshiki Takano**
P33	Transient Analysis of Plasmon Modes by Numerical Inversion of the Laplace Transform **Shinichiro Ohnuki, Tatsuichiro Okada, Yuya Kitaoka, Yuta Takeguchi, Yoshito Ashizawa, Katsuji Nakagawa**
P34	Large Scale Electromagnetic Simulations by Fast Multilevel Algorithms **Shinichiro Ohnuki, Koki Arakawa, Seiya Kishimoto**
P35	Hardware Acceleration for Electromagnetic Simulations Using Ultra High-Speed Parallel Processors **Shinichiro Ohnuki, Tomoaki Ichikawa, Masaki Hirano**
P36	Hund's Multiplicity Rule in Quasi-Two-Dimensional Two-Electron Artificial Atoms **Tokuei Sako**
P37	Scattering of Electromagnetic Waves by Dielectric Gratings with Dielectric Rectangular Cylinders Sandwiched between Two Multilayers **Tsuneki Yamasaki, Ryosuke Ozaki**
P38	Clear Evasion of the Uncertainty Relation with Very Small Probability: Numerical Illustration **Kazuo Fujikawa, Koichiro Umezu**
P39	