



**2ND JAPANESE-RUSSIAN
YOUNG SCIENTISTS CONFERENCE
ON NANO-MATERIALS AND NANO-TECHNOLOGY**

CONFERENCE PROGRAM

21 - 22 SEPTEMBER, 2010, TOKYO, JAPAN

COOPERATED BY :



M.V. LOMONOSOV MOSCOW STATE UNIVERSITY



TOKYO INSTITUTE OF TECHNOLOGY



TOKYO BOEKI CIS LTD.

PREFACE

Nano-technology is the fundamental technology applied in various areas such as Physics, Material science, Biology, Chemistry, etc., and it is widely expected throughout the world to contribute to the development for the future of science and industry.

The "1st Russian-Japanese Young Scientists Conference on Nano-technologies and Nano-materials" was held in October, 2008 in Moscow with the view to set aside an opportunity for young scientists engaged in Nano-technology related researches in each country to make mutual information exchange and establish a bilateral and cooperative relationship.

We believe that the 1st conference brought a successful results.

With expectation to cement our relationship and to bring forth further fruitful results, we have decided to organize the 2nd conference in Tokyo this year.

We hope that the conference will act as a fresh impetus for young scientists and will generate a synergetic effect for everyone.

COMMITTEE MEMBERS

Organizer:

*Organizing Committee of the 2nd Japanese-Russian
Young Scientists Conference on Nano-Materials and
Nano-Technology*

Chairman of the Committee :

Prof. A. Khokhlov / Prof. K. Okazaki

Committee Members :

Dr. A. Chertovich / Prof. K. Hanamura

Programme Members :

<Nano-Materials>

G. Majouga (Moscow State University)

Prof. S. Maruyama (The University of Tokyo)

<Nano-Bio Engineering>

A. Bscheva (Moscow State University)

Prof. Kitamori (The University of Tokyo)

<Nano-Systems and Nano-Devices>

A. Obraztsov (Moscow State University)

Prof. M. Asada (Tokyo Institute of Technology)

*Venue: Tokyo Institute of Technology
Royal Blue Hall*

21st of September, 2010 (Tue)

OPENING CEREMONY

09:00 Prof. Ken Okazaki

09:15 Prof. Alexey Khokhlov

YOUNG SCIENTISTS PRESENTATIONS (ORAL LECTURE)

SECTION 1. "NANO-SYSTEMS AND NANO-DEVICES"

09:30 Japan 1

Tetsuo Kodera; Tokyo Institute of Technology, Quantum Nano-Electronics Research Center
<Silicon Quantum Dots for Spin-Based Quantum Information Processing>

09:45 RUSSIA 1

A.L. KLAUSYUK, M.V. LOMONOSOV MOSCOW STATE UNIVERSITY, FACULTY OF PHYSICS
<STRUCTURE, QUANTUM EFFECTS AND MAGNETISM IN TRANSITION METAL
NANOCONTACTS >

10:00 JAPAN 2

TOMOHIRO AMEMIYA; TOKYO INSTITUTE OF TECHNOLOGY, QUANTUM NANO-
ELECTRONICS RESEARCH CENTER
<METAMATERIAL-BASED CONTROL OF PERMEABILITY IN GaInAsP/InP Multimode-
INTERFEROMETERS>

10:15 RUSSIA 2

A.V. TYURNINA., M.V. LOMONOSOV MOSCOW STATE UNIVERSITY, FACULTY OF PHYSICS
<THIN FILM TRANSISTOR FROM CVD GRAPHENE >

10:30 JAPAN 3

TORU KANAZAWA; TOKYO INSTITUTE OF TECHNOLOGY, DEPARTMENT OF
PHYSICAL ELECTRONICS
<InP/GaAs QUANTUM WELL CHANNEL MOSFET BONDED ON SILICON SUBSTRATE>

10:45 RUSSIA 3

VICTOR KLESHCH., M.V. LOMONOSOV MOSCOW STATE UNIVERSITY,
DEPARTMENT OF PHYSICS
<ELECTROMECHANICAL SELF-OSCILLATIONS OF CARBON NANOTUBE FIELD EMITTERS >

11:00 JAPAN 4

SAFUMI SUZUKI; TOKYO INSTITUTE OF TECHNOLOGY, INTERDISCIPLINARY
GRADUATE SCHOOL OF SCIENCE AND ENGINEERING
<1.04 THZ FUNDAMENTAL OSCILLATION OF RESONANT TUNNELING
DIODE AT ROOM TEMPERATURE>

11:15 JAPAN 5

KAZUYUKI TAKAI; TOKYO INSTITUTE OF TECHNOLOGY, DEPARTMENT OF CHEMISTRY
<ELECTRONIC PROPERTIES OF NANOGRAFENE>

11:30 *RUSSIA 4*

N.R. ARUTYUNYAN., A.M. PROKHOROV GENERAL PHYSICS INSTITUTE, RAS
<ANISOTROPIC SYSTEMS OF ALIGNED NANOTUBES >

11:45 *JAPAN 6*

YUTAKA OHNO; NAGOYA UNIVERSITY, DEPARTMENT OF QUANTUM ENGINEERING
<FABRICATION AND CHARACTERIZATION OF HIGH-PERFORMANCE CARBON NANOTUBE
THIN-FILM TRANSISTORS BASED ON SIMPLE TRANSFER TECHNIQUE>

12:00 *RUSSIA 5*

S.A. ZAPUNIDY., M.V. LOMONOSOV MOSCOW STATE UNIVERSITY,
INTERNATIONAL LASER CENTER & FACULTY OF PHYSICS
<NANOCOMPOSITE POLYMER-FULLERENE SOLAR CELLS WITH INCREASED
PHOTOVOLTAGE >

12:15 *JAPAN 7*

YASUYOSHI KUROKAWA; TOKYO INSTITUTE OF TECHNOLOGY, DEPARTMENT OF
PHYSICAL ELECTRONICS
<APPLICATION OF SILICON QUANTUM DOTS TO THE THIRD GENERATION PHOTOVOLTAICS>

12:30 *RUSSIA 6*

S.N. BOKOVA., A.M. PROKHOROV GENERAL PHYSICS INSTITUTE, RAS
<THE SYSTEMS OF POLYMERIC FIBERS AND SINGLE-WALL CARBON NANOTUBES :
DIAGNOSTICS AND PROPERTIES >

12:45 *JAPAN 8*

SHUNSUKE YOSHII; TOHOKU UNIVERSITY, INSTITUTE FOR MATERIALS RESEARCH
<ELECTRON SPIN RESONANCE ON 3D-4F HETERO-METALLIC NANO MAGNET>

13:00 – 14:00 *LUNCH*

14:00 *JAPAN 9*

KOUHEI HAMAYA; KYUSHU UNIVERSITY, GRADUATE SCHOOL OF INFORMATION
SCIENCE AND ELECTRICAL ENGINEERING
<SPIN INJECTION AND DETECTION IN SILICON ACROSS THE ATOMICALLY CONTROLLED
EPITAXIAL Fe₃Si/Si SCHOTTKY-TUNNEL BARRIERS>

14:15 *RUSSIA 7*

ALEXANDER CHERNOV., A.M. PROKHOROV GENERAL PHYSICS INSTITUTE, RAS
<OPTICAL SPECTROSCOPY OF FILMS WITH EMBEDDED SINGLE-WALL CARBON
NANOTUBES FOR LASER APPLICATIONS >

14:30 *JAPAN 10*

TAKAAKI TANIGUCHI; TOKYO INSTITUTE OF TECHNOLOGY, MATERIALS AND
STRUCTURES LABORATORY
<HYDROTHERMAL GROWTH OF HIGHLY CRYSTALLINE AND DISPERSE YVO₄-BASED
NANOPARTICLES FOR BIOIMAGING>

14:45 *JAPAN 11*

TOMOAKI YAMADA; TOKYO INSTITUTE OF TECHNOLOGY, INTERDISCIPLINARY GRADUATE SCHOOL OF
SCIENCE AND ENGINEERING
<SELF-ASSEMBLED NANO-OBLIQUE STRUCTURE FOR RF TUNABLE APPLICATIONS>

SECTION 2. "NANO-BIO ENGINEERING"

15:00 *RUSSIA 8*

ALEXANDER VASSILEVSKI., M.M. SHEMYAKIN AND YU. A. OVCHINNIKOV INSTITUTE OF BIOORGANIC CHEMISTRY, RAS
<NATURAL TOXINS AS TOOLS IN NEUROSCIENCE >

15:15 *JAPAN 12*

NORITADA KAJI; NAGOYA UNIVERSITY, DEPARTMENT OF APPLIED CHEMISTRY, GRADUATE SCHOOL OF ENGINEERING
<CARBON NANOTUBE TECHNOLOGIES FOR GENE DELIVERY INTO PLANT CELLS>

15:30 – 15:45 *COFFEE BREAK*

15:45 *RUSSIA 9*

ANTON CHUGUNOV., M.M. SHEMYAKIN AND YU. A. OVCHINNIKOV INSTITUTE OF BIOORGANIC CHEMISTRY, RAS
<COMPUTATIONAL STRUCTURE PREDICTION OF TRANSMEMBRANE DOMAINS OF PROTEINS : ADVANTAGE OF KNOWLEDGE-BASED APPROACH >

16:00 *JAPAN 13*

SEIICHI NISHIZAWA; TOHOKU UNIVERSITY, DEPARTMENT OF CHEMISTRY, GRADUATE SCHOOL OF SCIENCE
<A SURFACE PLASMON RESONANCE BIOSENSOR BASED ON A SMALL LIGAND FOR DETECTING ORPHAN BASES IN ABASIC SITE-CONTAINING DNA DUPLEXES>

16:15 *RUSSIA 10*

ANTON A. POLYANSKY., M. M. SHEMYAKIN AND YU. A. OVCHINNIKOV INSTITUTE OF BIOORGANIC CHEMISTRY, RAS
<DE-NOVO PREDICTION OF TRANSMEMBRANE DIMERS FOR BITOPIC PROTEINS IS AN EFFICIENT PLATFORM TO DESIGN OF NOVEL THERAPEUTIC AGENTS>

16:30 *JAPAN 14*

RYOJI KURITA; NATIONAL INSTITUTE OF ADVANCED INDUSTRIAL SCIENCE AND TECHNOLOGY
<BIOMOLECULAR DETERMINATION BY ELECTROCHEMICAL AND SURFACE PLASMON RESONANCE ON NANOSTRUCTURED SURFACES>

17:00 *POSTER SESSION*

19:00 – 20:30 *PARTY*

22nd of September, 2010 (Wed)

09:00 *RUSSIA 11*

DMITRY V. ZLENKO., M.V. LOMONOSOV MOSCOW STATE UNIVERSITY, FACULTY OF BIOLOGY
<SHORT-TIME THERMAL MOTIONS AND DIFFUSION OF LIPID MOLECULES >

09:15 *JAPAN 15*

TOSHIHISA OSAKI / RYUJI KAWANO / HIROTAKA SASAKI / SHOJI TAKEUCHI;
KANAGAWA ACADEMY OF SCIENCE AND TECHNOLOGY
<BILAYER LIPID MEMBRANE MICROARRAY FOR IONCHANNEL RECORDINGS>

09:30 *RUSSIA 12*

MARIA RUBTSOVA., M.V. LOMONOSOV MOSCOW STATE UNIVERSITY, DEPARTMENT OF CHEMISTRY
<TESTING TELOMERASE ACTIVITY FOR EARLY DIAGNOSIS OF TUMORS AND FOR CREATION OF
NEW ANTITUMOR AGENTS>

09:45 *JAPAN 16*

NORIHISA MIKI; KEIO UNIVERSITY, DEPARTMENT OF MECHANICAL ENGINEERING
<MICROFLUIDIC FORMATION OF THREE-DIMENSIONAL SPHEROID>

10:00 *RUSSIA 13*

ANNA V. BACHEVA., M.V. LOMONOSOV MOSCOW STATE UNIVERSITY, DEPARTMENT OF CHEMISTRY
<INHIBITION OF THE PROTEASOME, WASTE-DISPOSAL CELL NANOFACORY,
WHICH IS UPREGULATED IN BRAINS DURING EXPERIMENTAL AUTOIMMUNE
ENCEPHALOMYELITIS >

10:15 *JAPAN 17*

AKIHIDE HIBARA; THE UNIVERSITY OF TOKYO, INSTITUTE OF INDUSTRIAL
SCIENCE
<INTEGRATION OF CHEMICAL/BIOCHEMICAL OPERATIONS BY UTILIZING
MICRO-NANO DROPLETS>

10:30 *RUSSIA 14*

ILYA PETROV., SIBERIAN STATE AEROSPACE UNIVERSITY
<ORGANISM DIAGNOSTICS USING THE INFORMATIONAL NANOSTRUCTURES
ANALYSIS OF BIOLOGICAL FLUID BY DISCRETE COMPONENTS>

10:45 *JAPAN 18*

MASATERU TANIGUCHI; THE INSTITUTE OF SCIENTIFIC AND INDUSTRIAL
RESEARCH
<DEVELOPMENT OF 3G DNA SEQUENCER USING GATING NANOPORE DEVICES>

SECTION 3. "NANO MATERIALS"

11:00 *RUSSIA 15*

A.G. MAJOUGA., M.V. LOMONOSOV MOSCOW STATE UNIVERSITY, DEPARTMENT OF CHEMISTRY
< SYNTHESIS OF NOVEL ORGANIC LIGANDS FOR GOLD NANOPARTICLES
DECOLATION AND ARCHITECTURES BASED ON THEM >

11:15 JAPAN 19

AYAE SUGAWARA; THE UNIVERSITY OF TOKYO, DEPARTMENT OF CHEMICAL
SYSTEM ENGINEERING
<ONE-DIMENSIONAL ASSEMBLY OF COLLOIDAL SILICA NANOSPHERES>

11:30 RUSSIA 16

DARIA A. PICHUGINA., M.V. LOMONOSOV MOSCOW STATE UNIVERSIT, DEPARTMENT OF CHEMISTRY
< QUANTUM-CHEMICAL APPROACH IN STUDY OF STRUCTURES AND PROPERTIES
OF GOLD NANOPARTICLES >

11:45 JAPAN 20

SUGURU NODA; THE UNIVERSITY OF TOKYO, DEPARTMENT OF CHEMICAL SYSTEM
ENGINEERING
<RAPID GROWTH OF MILLIMETER-TALL SINGLE-WALLED CARBON NANOTUBES>

12:00 RUSSIA 17

IRINA SHIKHANOVA., INSTITUTE OF SOLUTION CHEMISTRY, RAS
<THE PHYSICO-CHEMICAL PROPERTIES OF DISPERSIONS OF HYBRID ORGANO-
INORGANIC NANOCOMPOSITES OF TiO₂ IN POLYDIMETHYLSILOXANE
UNDER THE IMPOSITION OF ELECTRIC FIELDS >

12:15 JAPAN 21

KAZUNARI MATSUDA; KYOTO UNIVERSITY, INSTITUTE FOR CHEMICAL
RESEARCH
<PHOTOLUMINESCENCE ENHANCEMENT OF SINGLE-WALLED CARBON NANOTUBE
USING PLASMON RESONANCE>

12:30 RUSSIA 18

ALEXANDER YU. FILATOV., M.V. LOMONOSOV MOSCOW STATE UNIVERSITY,
DEPARTMENT OF CHEMISTRY
<APPLICATION OF SEM AND EDX MICROANALYSIS FOR DETERMINING THE
INTEGRAL DISSOLUTION RATE OF ALLOYS IN CRYOLITE-ALUMINA MELTS >

12:45 JAPAN 22

SHOHEI CHIASHI; THE UNIVERSITY OF TOKYO, DEPARTMENT OF MECAHNICAL
ENGINEERING
<GROWTH CONTROL OF SINGLE-WALLED CARBON NANOTUBES>

13:00 – 14:00 LUNCH

14:00 RUSSIA 19

OLEG BRYLEV., M.V. LOMONOSOV MOSCOW STATE UNIVERSITY,
DEPARTMENT OF MATERIAL SCIENCE
<FREEZE-DRYING SYNTHESIS OF HIGHLY DISPERSE LiNi_xMn_xCo_{1-2x}O₂
CATHODE MATERIALS FOR Li-Ion BATTERIES >

14:15 JAPAN 23

YOICHI MURAKAMI; TOKYO INSTITUTE OF TECHNOLOGY, GLOBAL EDGE INSTITUTE
<PHOTEMISSION PROPERTIES OF CARBON NANOTUBES AT HIGH EXCITON DENSITY>

14:30 *RUSSIA 20*

ALEXEY V. GARSHEV., M.V. LOMONOSOV MOSCOW STATE UNIVERSITY,
DEPARTMENT OF MATERIAL SCIENCE
< SYNTHESIS AND PROPERTIES OF EQUIGRANULAR SPHERICAL TiO_2 >

14:45 *JAPAN 24*

YUTAKA MATSUO; THE UNIVERSITY OF TOKYO, DEPARTMENT OF CHEMISTRY
<FUNCTIONALIZATION OF FULLERENES AND CONSTRUCTION OF SOLUTION-PROCESSABLE
THREE-LAYERED ORGANIC PHOTOVOLTAIC DEVICES>

15:00 *RUSSIA 21*

IRINA KOLESNIK., M.V. LOMONOSOV MOSCOW STATE UNIVERSITY,
DEPARTMENT OF MATERIAL SCIENCE
<SYNTHESIS AND CATALYTIC PROPERTIES OF MESOPOROUS TITANIUM OXIDE
AND RELATED MATERIALS >

15:15 *JAPAN 25*

SUSUMU OKADA; UNIVERSITY OF TSUKUBA, GRADUATE SCHOOL OF PURE
AND APPLIED SCIENCES
<ELECTRONIC PROPERTIES OF GRAPHITE THIN FILMS:
INTERLAYER STACKING ARRANGEMENT AND EXTERNAL ELECTRIC FIELD>

15:30 – 15:45 *COFFEE BREAK*

15:45 *RUSSIA 22*

ALEXANDER VANETSEV., KURNAKOV INSTITUTE OF GENERAL AND INORGANIC CHEMISTRY, RAS
< MICROWAVE SYNTHESIS OF MONODISPERSE LUMINESCENT OXIDES POWDERS >

16:00 *RUSSIA 23*

P.V. KRIVOSHAPKIN., INSTITUTE OF CHEMISTRY / KOMI SCIENCE CENTER OF URAL BRANCH OF RAS
<PREPARATION AND APPLICATION OF NANOSIZED ALUMINUM OXIDE
PARTICLES AND FIBERS >

16:15 *JAPAN 26*

SHINJI YAMASHITA., THE UNIVERSITY OF TOKYO, DEPARTMENT OF ELECTRICAL ENGINEERING
AND INFORMATION SYSTEMS
<CARBON NANOTUBE PHOTONICS FOR LASER MODE LOCKING AND SIGNAL PROCESSING>

16:30 *RUSSIA 24*

IGOR S. MASHKOVSKY., N.D. ZELINSKY INSTITUTE OF ORGANIC CHEMISTRY, RAS
<PERFORMANCE OF BIMETALLIC Pd-CONTAINING NANOCATALYST BASED ON
HETEROBIMETALLIC COMPLEXES IN SELECTIVE ACETYLENE HYDROGENATION >

16:45 *RUSSIA 25*

ALEXANDER. NIKOLAEV., NESMEYANOV INSTITUTE OF ORGANOELEMENT COMPOUNDS, RAS
<PREPARATION OF METAL-CONTAINING NANOCOMPOSITES USING SUPERCRITICAL
CARBON DIOXIDE>

17:00 – *POSTER SESSION*

19:00 – 20:30 *FAREWELL PARTY*

