PROGRAM

MANA International Symposium 2015

11th March - 13th March, 2015

Venue: *Tsukuba International Congress Center EPOCHAL TSUKUBA*

(Address: 2-20-3, Takezono, Tsukuba, Ibaraki, 305-0032, Japan)

March 10th

18:00 - *Reception*

March 11th

Opening (Chair: Yoshio Bando)

9:00 - 9:10 Opening Address

Sukekatsu Ushioda (President of NIMS)

9:10 - 9:15 Greetings

Hideki Iwabuchi (Director, Office for Basic Research Projects, Basic Research Promotion Division, Research Promotion Bureau, MEXT)

9:15 - 9:25 Greetings

Toshio Kuroki (Program Director of WPI Program; Deputy Director of Research Center for Science Systems, JSPS)

9:25 - 9:35 Greetings

Gunzi Saito (Program Officer of WPI Program; Professor, Meijo University)

9:35 - 9:55 Outline of MANA

Masakazu Aono (Director-general of MANA, NIMS)

9:55 -10:05 *Group Photograph at the Main Entrance*

10:05 -10:20 *Coffee Break*

S-1 Nano-Materials 1 (Chair: Anthony K. Cheetham, Takayoshi Sasaki)

10:20 - 10:50 Carbon materials for the future (**Invited**)

Rodney S. Ruoff (Director, Center for Multidimensional Carbon Materials,UNIST)

10:50 - 11:20 Static and dynamical density-functional calculations for nano-materials: Moiré-induced electron localization in graphene and laser-triggered crystallization in SiO_2 (**Invited**)

Atsushi Oshiyama (Professor, University of Tokyo)

11:20 - 11:50 Molecular catalysts and devices for artificial photosynthesis (**Invited**)

Ken Sakai (Principal Investigator, i^2cner, Kyushu University)

11:50 - 12:05 Molecular functions for controlling electron-tunneling in Si-based devices

Yutaka Wakayama (MANA Scientist, NIMS)

12:05 -13:10 *Lunch*

Special Lecture (Chair: Masakazu Aono)

13:10 - 13:50 The background of the discovery of carbon nanotubes (**Invited**)
Sumio Iijima (Professor, Meijo University)

13:50 -14:10 *Coffee Break*

S-2 Nano-Materials 2 (Chair: Rodney S. Ruoff, Toyohiro Chikyo)

14:10 - 14:40 Feasibility of flexible electronics based on nitride crystals (**Invited**)
Hiroshi Fujioka (Professor, University of Tokyo)
14:40 - 15:10 Single-molecule and real-time TEM imaging of single organic molecules (**Invited**)
Eiichi Nakamura (Professor, University of Tokyo)
15:10 - 15:30 Alignment of 2D oxide nanosheets at mesoscale range in water
Takayoshi Sasaki (MANA PI, NIMS)

15:30 - 15:50 *Coffee Break*

15:50 - 17:20 ***Poster Presentations*** (Chair: Tomonobu Nakayama)

17:20 - 17:25 *Break*

17:25 - 19:00 ***Poster Sessions***

March 12th

S-3 Nano-Power 1 (Chair: Louis Schlapbach, Kohei Uosaki)

9:00 - 9:30 Water splitting on some oxynitride materials (**Invited**)
Kazunari Domen (Professor, University of Tokyo)
9:30 - 10:00 Artificial photosynthesis--efficient water splitting systems with molecular catalysts
Licheng Sun (Professor, KTH Royal Institute of Technology) (**Invited**)
10:00 - 10:20 Design and construction of nanostructured materials for solar fuel conversion
Jinhua Ye (MANA PI, NIMS)
10:20 - 10:35 Large-scale DFT simulations of Ge/Si nanostructures
David Bowler (Reader in Physics & Astronomy, UCL, MANA Satellite API)

10:35 - 11:15 *Poster Sessions and Coffee Break*

S-4 Nano-Power 2 (Chair: Licheng Sun, Jinhua Ye)

11:15 - 11:45 Thin films for renewable energy applications: SOFC and photocatalysis (**Invited**)
Thomas Lippert (Head, Materials Group, Paul Scherrer Institut)

11:45 - 12:15 Design of materials properties by microstructure and external fields (**Invited**)
Horst Hahn (Professor, Karlsruhe Institute of Technology)

12:15 - 12:30 Utilizing atomic network structure and nanostructures for development of effective thermoelectric materials
Takao Mori (MANA Scientist, NIMS)

12:30 -14:00 Lunch

S-5 Nano-Life 1 (Chair: Kam W. Leong, Guoping Chen)

14:00 - 14:30 Interfacing nanomaterials with biology: Applications in therapeutics and diagnostics
Vincent Rotello (Distinguished Professor, Univ. of Massachusetts) (**Invited**)

14:30 - 15:00 Chemical biology of nucleic acids: DNA origami and artificial genetic switch (**Invited**)
Hiroshi Sugiyama (Professor, WPI-iCeMs Kyoto University)

15:00 - 15:20 Design of Anti-oxidative injectable gels for local inflammation treatments
Yukio Nagasaki (Professor, University of Tsukuba, MANA Satellite PI)

15:20 - 15:35 Bio-inspired Nanoarchitectonics for early and patient-oriented medical treatment
Kohsaku Kawakami (MANA Scientist, NIMS)

15:35 - 15:55 Coffee Break

S-6 Nano-Life 2 (Chair: Vincent Rotello, Francoise Winnik)

15:55 - 16:25 Targeted chemo- and molecular-therapy by self-assembled supramolecular nanosystems
Kazunori Kataoka (Professor, University of Tokyo) (**Invited**)

16:25 - 16:55 Bioengineering of direct cellular reprogramming (**Invited**)
Kam W. Leong (Professor, Columbia University)

16:55 - 17:15 Creation of nanostructured niche for cell function manipulation
Guoping Chen (MANA PI, NIMS)

18:00 - Banquet

March 13th

S-7 Nano-System 1 (Chair: Toshiaki Enoki, Tomonobu Nakayama)

9:00 - 9:30 Recent progress in photonic crystals and their applications (**Invited**)
Susumu Noda (Professor, Kyoto University)

9:30 - 9:50 Updated progress in piezotronics and Piezo-phototronics
Zhonglin Wang (Professor, GIT, MANA Satellite PI)

9:50 - 10:05 Nanogap-based plasmonic light absorbers
Tadaaki Nagao (MANA Group Leader, NIMS)

10:05 - 10:20 White light emitting diode based on silicon nanocrystals
Naoto Shirahata (MANA Independent Scientist, NIMS)

10:20 - 10:40 Coffee Break

S-8 Nano-System 2 (Chair: James K. Gimzewski, Zhonglin Wang)

10:40 - 11:10 Molecular motors on functionalized surfaces (**Invited**)
Winfried Teizer (Professor, AIMR,Tohoku Univ., Texas A&M Univ.)

11:10 - 11:30 Certifying the new Omicron LT-UHV 4 STM & SEM machine
Christian Joachim (CEMES/CNRS, MANA Satellite PI)

11:30 - 11:50 Electrical properties of complex network conductors measured with MP-SPM
Tomonobu Nakayama (MANA PI, NIMS)

11:50 - 12:05 Functional nanoionic devices achieved by controlling the local ion migration at interfaces.
Kazuya Terabe (MANA Group Leader, NIMS)

12:05 - 12:35 Poster Award Ceremony and Closing Remarks
Yoshio Bando (MANA Chief Operating Officer, NIMS)