

1st WPI Workshop on Materials Science
10th France-Japan Workshop on Nanomaterials
6–9 June 2013, iCeMS Main Building 2nd floor, Kyoto University

IT = Invited Talk: 25 mins (presentation) + 5 mins (discussion)

For **Sunday 9 June**, lab tours will be conducted at the iCeMS Research Building 09:00–11:00. Please meet in front of the entrance to the Main Building at 09:00.

Thursday 6 June

15:00– Registration

16:30– Opening Remarks

Susumu Kitagawa, Director, iCeMS/Kyoto University (5 mins)
Teruo Kishi, Advisor NIMS (5 mins)
Jean Etourneau, CNRS-ICMCB/University of Bordeaux (5 mins)
Toshio Kuroki, WPI Program Director and Senior Adviser
JSPS Research Center for Science Systems (15 mins)

Session 1, Koichiro Tanaka (chair)

17:00–17:30 IT-1 **Christian Joachim**, CEMES-CNRS
Mechanics of Molecules-machines: Wheels, Gears, Motors and Cars

17:30–18:00 IT-2 **Jérémy Come**, CIRIMAT/University Paul Sabatier of Toulouse
Nanostructured Materials for Electrochemical Energy Storage

18:00–18:30 IT-3 **Hiroshi Kitagawa**, Graduate School of Science/Kyoto University
Creation of Functional Materials on the Basis of Elemental Strategy

18:30–18:40 C’Nano Introduction

Jean-Pierre Aimé, CNRS/University of Bordeaux

18:40–19:00 WPI Materials Science Introductions (5 mins each)

Motoko Kotani, Director, AIMR/Tohoku University
Yoshio Bando, Chief Operating Officer, MANA/NIMS
Kazuo Funaki, Admin Director, I²CNER/Kyushu University
Susumu Kitagawa, Director, iCeMS/Kyoto University

19:00–20:30 Reception: iCeMS Main Building 2nd floor lounge

Friday 7 June

Session 2, Yoshio Bando (chair)

08:30–09:00 IT-4 **Reiko Oda**, CNRS/University of Bordeaux
Morphogenesis of Chiral Nano-assemblies Based on Molecular Assemblies, towards Functional Hybrid Nano Materials

09:00–09:30 IT-5 **Shin-ichi Orimo**, AIMR/Tohoku University
Hydride Researches for Energy Applications: Transition between Bonding States of Hydrogen in Hydrides

09:30–10:00 IT-6 **Sophie Lanone**, INSERM/Créteil University
Physico-chemical Determinants of Nanoparticles Toxicity

10:00–10:30 Coffee Break

Session 3, Christian Joachim (chair)

10:30–11:00 IT-7 **Jean-Christophe Le Breton**, CNRS/University of Rennes
Electrical and Thermal Spin Injection in Semiconductors

11:00–11:30 IT-8 **Koichiro Tanaka**, iCeMS/Kyoto University
Terahertz Photonics for Material Science

11:30–12:00 IT-9 **Christopher Bäuerle**, Institut Néel-CNRS/University Joseph Fourier
Towards Quantum Optics with Single Flying Electrons

12:00–13:00 Lunch for Presenters and Guests: *Le Café* (Institut français du Japon/Kansai)

Session 4, Takayoshi Sasaki (chair)

13:00–13:30 IT-10 **Tomoji Kawai**, ISIR/Osaka University
Metal Oxide Nanowires for Resistive Switching Devices

13:30–14:00 IT-11 **Guy Le Lay**, CNRS-CINaM/Aix-Marseille University
Atomic Resolution Imaging and Dirac Fermionics of Silicene Sheets

14:00–14:30 IT-12 **Yoshio Bando**, MANA/NIMS
Boron Nitride Nanotubes/nanosheets and Composites

14:30–15:00 IT-13 **Nicolas Izard**, CNRS-UMR/Paris-Sud University
Carbon Nanotube Based Photonics

15:00–15:30 Group Photo & Coffee Break

Session 5, Eric Lesniewska (chair)

15:30–16:00 IT-14 **Cyril Aymonier**, CNRS-ICMCB/University Bordeaux
Design of Advanced Nanostructured Materials Using Supercritical Fluids

16:00–16:30 IT-15 **Yusuke Yamauchi**, MANA/NIMS
Functional Inorganic Nanoporous Materials: Synthesis and Applications

16:30–17:00 IT-16 **Fabienne Testard**, CEA-CNRS/CEA Saclay
Gold nanoparticles: Investigation on Mechanism through in situ SAXS/XANES/UV

17:00–17:30 IT-17 **Miho Yamauchi**, I²CNER/Kyushu University
Materials Development for Realization of Carbon-Neutral Energy Cycles

17:30–18:00 IT-18 **Sylvie Begin-Colin**, CNRS/Strasbourg University
Design of Functionalized Iron Oxide Nanostructures for Spintronic and Biomedical Applications

Saturday 8 June

Session 6, Yusuke Yamauchi (chair)

- 08:30–09:00 IT-19 **Atsushi Takahara**, I²CNER/Kyushu University
Design and Physicochemical Properties of Novel (Organic/Inorganic) Hybrids from Natural Aluminosilicate Nanotubes
- 09:00–09:30 IT-20 **Jean-Pierre Aimé**, IECB-CBMN CNRS/University Bordeaux
BioInspired Nanotechnology & High Speed AFM Instrumentation
- 09:30–10:00 IT-21 **Takayoshi Sasaki**, MANA/NIMS
Extensive Swelling of Layered Metal Oxides to Produce 2D Nanosheets
- 10:00–10:30 Coffee Break

Session 7, Guy Le Lay (chair)

- 10:30–11:00 IT-22 **Alain Fave**, INL-CNRS/University of Lyon
Nanophotonics for Light Management in Thin Film Si Solar Cells
- 11:00–11:30 IT-23 **Kazuhito Tsukagoshi**, MANA/NIMS
Semiconductive Property in Bilayer Graphene Modulated by Electric Field
- 11:30–12:00 IT-24 **Jerome Tignon**, CNRS/University Pierre et Marie Curie
Ultrafast THz Spectroscopy of Quantum Cascade Lasers
- 12:00–13:00 Lunch: iCeMS Main Building 2nd floor lounge

Session 8, Miho Yamauchi (chair)

- 13:00–13:30 IT-25 **Susumu Kitagawa**, iCeMS/Kyoto University
Porous Coordination Polymers/Metal-Organic Frameworks
- 13:30–14:00 IT-26 **Hiroshi Imahori**, iCeMS/Kyoto University
Photofunctional Materials for Energy and Biological Applications
- 14:00–14:30 IT-27 **Richard Mattana**, CNRS/Paris-Sud University
Spintronics with Small Molecules
- 14:30–15:00 IT-28 **Chihaya Adachi**, I²CNER/Kyushu University
Novel Organic Light Emitting Material
- 15:00–15:30 Coffee Break

Session 9, Jean-Pierre Aimé (chair)

- 15:30–16:00 IT-29 **Alexis Vlandas**, IEMN-CNRS
Hybrid Nano-devices Using Nanofabrication and DNA
- 16:00–16:30 IT-30 **Kazue Kurihara**, AIMR/Tohoku University
Characterization of Confined Water by Surface Forces Measurement
- 16:30–17:00 IT-31 **Vinh Le Thanh**, CINaM-CNRS/Aix-Marseille University
Si-based Heterostructures, Materials for Spintronics
- 17:00–17:30 IT-32 **Masatsugu Shimomura**, AIMR/Tohoku University
Engineering Neo-Biomimetics: Materials Engineering based on Biological Diversity and Self-Organization
- 17:30–18:00 IT-33 **Eric Lesniewska**, CNRS/University of Bourgogne
High-Speed Atomic Force Microscopy: Interests in Biotechnology
- 18:00– Closing Remarks: **Yoshio Bando, Jean Etourneau**