



## Tentative Program

### 2<sup>nd</sup> Joint Workshop between NTU, Singapore and Tokyo Tech

November 17 and 18, 2016

Ookayama Campus, Tokyo Tech

#### Day 1 - November 17 (Thursday)

9:00	Registration	West Bldg. 5, W531, Lecture Theatre
<b>Opening Session (9:30-11:00)</b>		
<ul style="list-style-type: none"> <li>● <i>Welcome Remarks</i> Dr. Yoshinao MISHIMA, President (Tokyo Tech)</li> <li>● <i>Opening Remarks</i> Prof. LAM Khin Yong, Chief of Staff and Vice President for Research (NTU)</li> <li>● <i>Developments of Energy Storage and Conversion Devices</i> Prof. Ryoji KANNO (Tokyo Tech)</li> <li>● <i>Introduction to Energy Research Institute at Nanyang Technological University</i> Prof. CHAN Siew Hwa (NTU)</li> </ul>		
Coffee Break (11:00-11:15)		Entrance to Lecture Theatre
<b>Plenary Session (11:15-12:15)</b>		
<ul style="list-style-type: none"> <li>● <i>Utilization of CO<sub>2</sub> as a Renewable Carbon Resource</i> Prof. Nobuharu IWASAWA (Tokyo Tech)</li> <li>● <i>Reductive Molecular Transformation by Sodium Hydride</i> Prof. Shunsuke CHIBA (NTU)</li> </ul>		
Lunch Break (12:15-13:45)		



## Breakout Sessions (13:45-17:20)

**Session 1: Robotics (West Bldg. 5, W531, Lecture Theatre)**

**Moderator: Prof. Yukio TAKEDA (Tokyo Tech) (13:45-17:20)**

### Session 1-1: Assistive Robotics Technology to Support Aged Society

- ***Introduction, Interactive Design of Assistive Devices***  
Prof. Yukio TAKEDA (Tokyo Tech)
- ***From Robot-Aided Rehabilitation to Soft Wearable Exosuit: Human in the Loop***  
Assist. Prof. Lorenzo MASIA (NTU)
- ***Artificial Heart and Power Supply Systems for Heart Failure Patients***  
Assoc. Prof. Wataru HIJIKATA (Tokyo Tech)
- ***Soft Robotics - their applications and basic technologies -***  
Prof. Koichi SUZUMORI (Tokyo Tech)

**Coffee Break (15:25-15:40)**

**Entrance to Lecture Theatre**

### Session 1-2: Robot Technology to Support New Industry

- ***Robotic Solutions for Infrastructure Preventive Maintenance***  
Dr. Michele GUARNIERI (HiBot)
- ***Robotic Manipulation with Contact and Dynamics***  
Assist. Prof. PHAM Quang Cuong (NTU)
- ***Assistive Mobile Robot and Decommissioning Robot***  
Assoc. Prof. Gen ENDO (Tokyo Tech)
- ***Surgical Robot Systems Using Pneumatic Actuators***  
Assoc. Prof. Kotaro TADANO (Tokyo Tech)



**Session 2: Hydrogen Energy (West Bldg. 8, 10F, Conf. Rm) (13:45-15:25)**

**Moderator: Prof. Ken OKAZAKI (Tokyo Tech)**

- ***Future Prediction of Hydrogen Energy System under NEDO Project:  
The Research Plan of Tokyo Tech***  
Prof. Manabu IHARA (Tokyo Tech)
- ***Fuel Cell and Hydrogen Technologies Programme at ERI@N***  
Prof. CHAN Siew Hwa (NTU)
- ***Photovoltaic Research Activities at Tokyo Tech (tentative)***  
Prof. Akira YAMADA (Tokyo Tech)
- ***Chemical Energy Conversion to Chemicals and Power using a FC Reactor  
and New Electrocatalysts***  
Prof. Ichiro YAMANAKA (Tokyo Tech)

**Coffee Break (15:25-15:40)**

**Session 3: Recycling of Materials and Separation of Elements/Nuclides  
(West Bldg. 8, 10F, Conf. Rm) (15:40-17:20)**

**Moderator: Assoc. Prof. Koichiro TAKAO (Tokyo Tech)**

- ***Removal of Radioactive Cesium from Soil Contaminated by Fukushima  
Daiichi NPP Accident***  
Prof. Kenji TAKESHITA (Tokyo Tech)
- ***Crystallochemical Designs for Nuclear Waste Fixation***  
Prof. Tim WHITE (NTU)
- ***Micro-Nano Fluidic Device for Separation and Analysis of Radionuclides***  
Assoc. Prof. Takahiko TSUKAHARA (Tokyo Tech)
- ***Ionic Liquids and Their Application in Separation***  
Assoc. Prof. LEE Jong-Min (NTU)
- ***R&E in Nuclear Safety and Security***  
Prof. Claude GUET (NTU)



**Session 4: New Molecular Chemistry (Main Building, Rm. 345) (13:45-17:20)**

**Moderator: Prof. Nobuharu IWASAWA (Tokyo Tech)**

- ***High-density Polymer Brushes Offering a Surface for Near-zero Azimuthal Anchoring of Liquid Crystals at Room Temperature***  
Assoc. Prof. Masatoshi TOKITA (Tokyo Tech)
- ***Organocatalyzed Controlled Polymerization for Polymer Structural Design and Polymer Material Design***  
Assoc. Prof. Atsushi GOTO (NTU)
- ***Metal Assembly in Organometallic Sandwich Frameworks***  
Prof. Tetsuro MURAHASHI (Tokyo Tech)
- ***Molecular Transformation with Vinyl Azides***  
Prof. Shunsuke CHIBA (NTU)
- ***Molecular-based Heterogeneous Photocatalysts for Solar Fuel Production***  
Assoc. Prof. Kazuhiko MAEDA (Tokyo Tech)

**Coffee Break (15:25-15:40)**

- ***Artificial Photosynthesis by Light Absorption, Hydrogen Evolution, and Biomass Valorization***  
Assist. Prof. SOO Han Sen (NTU)
- ***Bipolar Electropolymerization toward Conductive Material Networks***  
Assoc. Prof. Shinsuke INAGI (Tokyo Tech)
- ***2D Materials for Electrocatalytic Carbon Dioxide and Proton Reduction***  
Assoc. Prof. Martin PUMERA (NTU)
- ***SERS Measurement of Single Molecular Junction***  
Prof. Manabu KIGUCHI (Tokyo Tech)
- ***Plasmonic Liquid Marbles for In-situ Reaction Kinetics Tracking at Liquid-liquid Interface***  
Assoc. Prof. LING Xing Yi (NTU)



**Session 5: Water Resources (Main Building, Rm. 410) (13:45-15:25)**

**Moderator: Prof. Shinjiro KANAE (Tokyo Tech)**

- ***Fundamental and Applied Research for Enhancing Sustainability of Water Environments***  
Assoc. Prof. Chihiro YOSHIMURA & Manabu FUJII (Tokyo Tech)
- ***High Performance Computational Hydraulics***  
Assoc. Prof. Adrian LAW (NTU)
- ***Advancements in Urban Climate Research at Tokyo Tech***  
Adjunct Lecturer Alvin C.G. VARQUEZ (Tokyo Tech)
- ***Molecular Modeling of Seawater Treatment Processes Using Novel Nanomaterials***  
Assist. Prof. ZHOU Kun (NTU)
- ***The Impact and Control of Microbial Communities in Aquatic Systems***  
Assoc. Prof. Scott RICE (NTU)

**Coffee Break (15:25-15:40)**

**Session 6: Medical Engineering and Brain Science**

**(Main Building, Rm. 410) (15:40-17:20)**

**Moderator: Prof. Nobuhiro NISHIYAMA (Tokyo Tech)**

- ***[Title TBD]***  
Dr. Parasuraman PADMANABHAN (NTU)
- ***Dystonia and Parkinsonism Caused by a Deficiency of Tetrahydrobiopterin***  
Prof. Hiroshi ICHINOSE (Tokyo Tech)
- ***[Title TBD]***  
Assoc. Prof. CHO Nam-Joon (NTU)
- ***Design of Multifunctional Proteins for Tissue Engineering***  
Prof. Eiry KOBATAKE (Tokyo Tech)
- ***Emotion Recognition using EEG Signals***  
Assoc. Prof. SER Wee (NTU)
- ***Ultrasonic Actuator Technologies for Medical Applications***  
Prof. Kentaro NAKAMURA (Tokyo Tech)

## Day 2 - November 18 (Friday)

9:00	Registration	West Bldg. 5, W531, Lecture Theatre
<b>Keynote Presentations (9:30-11:00)</b>		
<i>Design and Control of Robots with Underactuated Mechanisms</i> Prof. Nobuyuki IWATSUKI (Tokyo Tech)		
<i>Robotics Activities in Automation Systems at DENSO</i> Dr. Fumio KOJIMA (Denso Corporation)		
<i>Innovations in Infrastructure Service Robotics</i> Prof. CHEN I-Ming (NTU)		
Coffee Break (11:00-11:15)		Entrance to Lecture Theatre
<b>Wrap-up Session (11:15-12:30)</b>		
Report on Session 1: Robotics (12min.) Report on Session 2: Hydrogen Energy (12min.) Report on Session 3: Recycling of Materials and Separation of Elements/Nuclides (12min.) Report on Session 4: New Molecular Chemistry (12min.) Report on Session 5: Water Resources (12min.) Report on Session 6: Medical Engineering and Brain Science (12min.)		
<b>Closing Session (12:30-12:40)</b>		
<ul style="list-style-type: none"> <li>● Prof. Tim WHITE (NTU)</li> <li>● Prof. Naoto OHTAKE (Tokyo Tech)</li> </ul>		