

# SCIENTIFIC PROGRAM for SPACC25

## Lectures

Friday, 23 November, 2018

8:30 Registration  
8:50 Opening Ceremony

### *Plenary Lecture*

Chairperson: Prof

9:00–9:45 PL-1 Julia Khusnutdinova (Okinawa Institute of Science and Technology)  
To be announced

9:45–10:00 Coffee Break

Chairperson: Prof

10:00–10:20 OL-1 Alina Uusiku (Kogakuin University)  
Fabrication of conductive Cu thin films using electrochemically prepared molecular precursor solutions

10:20–10:40 OL-2 Natangue Heita Shafudah (Kogakuin University)  
TiO<sub>2</sub> thin film fabrication *via* electrospray deposition from molecular precursor solution onto a ultra-thin SWCNT film pre-coated quartz glass substrate

10:40–11:00 OL-3 Natsumi Yano (Shimane University)  
New Cyclometalated Iridium(III) Complexes Coordinated with 2,2'-bipyridine prepared by the Post-Synthetic Modification

Chairperson: Prof

11:00–11:20 OL-4 Mako Tamaki (Osaka City University)  
Synthesis, Properties, and Catalytic Ability of Water-soluble Nickel(II) Complexes with Tridentate or Bidentate N-Heterocyclic Carbene Ligands Containing Pyridine and Sugar Moieties

11:20–11:40      OL-5      Toru Ishikawa (Tokyo University of Science)  
Thermal property of Ni salen type complex with two methyl group in ethylene diamine moiety

11:40–12:00      OL-6      Keisuke Kawamoto (Kanazawa University)  
Strategic Stabilization of Transition Metal Oxido Clusters by Protecting Groups

12:00–13:00      Lunch

13:00–13:10      Award Ceremony

*Award Lecture*

Chairperson: Prof

13:10–13:40      AL

13:40–13:55      Coffee Break

Chairperson: Prof

13:55–14:15      OL-7      Yutaka Hitomi (Doshisha University, PRESTO)  
Development of Oxidation Catalysts Based on Bio-inspired Iron Complexes

14:15–14:35      OL-8      Yusuke Kataoka (Shimane University)  
Synthesis, Crystal Structures, and Reactivities of Rh<sub>4</sub>Cl<sub>4</sub> Complexes with Unique Twisted-Box Shape Core

14:35–14:55      OL-9      Misaki Nakai (Kansai University)  
Antitumor activities of polypyridine Co(III) complexes as hypoxia activated prodrug

14:55–15:10      Coffee Break

*Session for Bio-Division*

Chairperson: Prof

- |             |                 |  |
|-------------|-----------------|--|
| 15:10–15:20 |                 | Greeting from Director of Bio-Division   |
| 15:20–15:40 | BOL-1           | Yuriko Matsumura (Tokyo Healthcare University)<br>The rapid detection of the multidrug-resistant microorganisms using two kinds of matrix-assisted laser desorption ionization-time-of-flight mass spectrometer              |
| 15:40–16:00 | BOL-2           | Junichi Suzuki (Tokyo Healthcare University, Yoshida Pharmaceutical CO., LTD.)<br><i>in vitro</i> efficacy of iodine based disinfectants and additives of ethanol for disinfection against various serotypes of Adenoviruses |
| 16:00–16:20 | BOL-3<br>(BP-1) | Shohei Moriya (Tokyo Institute of Technology)<br>Influence of gas species and gas temperature on reactive species generation in atmospheric pressure plasma  |
| 16:20–16:40 | BOL-4<br>(BP-2) | Yuma Suenaga (Tokyo Institute of Technology)<br>Investigation of bactericidal effect and factor in plasma bubbling disinfection using porous filter.   |
| 16:40–16:55 | BP-3–BP-6       | Poster Short Talks for Bio-Division  |
| 16:55–17:10 |                 | Coffee Break   |
| 17:10–18:10 | P-1–P-19        | Poster Short Talks for Regular Session   |
| 18:30–      |                 | Conference Banquet   |

## Saturday, 24 November, 2018

### Plenary Lecture

Chairperson: Prof

9:30–10:15      PL-2      Richard J. Cogdell (Glasgow University, UK)  
Use of genetic dissection to define the roles of each gene in the LH2 puc multigene family from *Rhodospseudomonas Palustris*

Chairperson: Prof

10:15–10:35      OL-10      Hiroyuki Nakamura (Tokyo Institute of Technology)  
Tyrosine-Specific Modification by Ruthenium Photocatalysts: Tools for Protein Engineering

10:35–10:55      OL-11      Chiasa Uragami (Kwansei Gakuin University)  
Vibronic interaction of carotenoid and surrounding solvent molecules as revealed by theoretical simulation of steady-state absorption spectra as well as by ultrafast spectroscopy using sub-20 fs laser pulse

10:55–11:10      Coffee Break

Chairperson: Prof

11:10–11:30      OL-12      Ryo Miyasato (Kao Corporation, Kwansei Gakuin University)  
Photocatalytic activity and surface carrier recombination dynamics of rutile-type TiO<sub>2</sub> powders for water splitting

11:30–11:50      OL-13      Kazuhiro Manseki (Gifu University)  
Creation of solid-state dye-sensitized solar cells using carbon nanomaterials

11:50–12:10      OL-14      Makoto Handa (Shimane University)  
Structures and Properties of Paddlewheel-type Diruthenium(III,III) Complexes with Benzamidinate Ligand

12:10–13:10      Lunch

*Special Lecture for Junior Doctor Training School Program (JST Program at University of the Ryukyus)*

Chairperson: Prof

13:10–13:50      SL      Brian K. Breedlove (Tohoku University)

13:50–14:00      Coffee Break

14:00–15:40      Poster Session

                         Odd numbers: 14:00–14:50

                         Even numbers: 14:50–15:40

15:40–15:55      Coffee Break

15:55–              Closing Ceremony

**Sunday, 25 November, 2018**

*Networking Session for Future Collaborations*

## Poster Presentations

- P-1 Mari Takasaki (Osaka City University)  
Development of Catalysts for Carbon-Sulfur Coupling Reactions Using Pd N-Heterocyclic Carbenes Complexes
- P-2 Natsuki Yabune (Osaka City University)  
Development of Trinuclear Complexes for Molecular Sensing
- P-3 Yuri Maeda (Nagoya Institute of Technology)  
Electrochemical evaluation of reactions for trinuclear complexes with alkyl halides
- P-4 Sotaro Kamakura (Kanazawa University)  
Systematic construction of molybdenum oxide clusters based on Mo<sub>4</sub>O<sub>8</sub> units
- P-5 Naoya Ikuta (Gifu University)  
Growth control of submicronscale doped-TiO<sub>2</sub> crystals using low-temperature Ti(IV) hydrolysis and condensation reactions
- P-6 Ryota Ueyama (Gifu University)  
Optimizing adsorption processes of ruthenium polypyridine complexes for solid-state dye-sensitized solar cells
- P-7 Dai Hasegawa (Gifu University)  
Structure analyses of porous nanocrystalline-TiO<sub>2</sub> films derived from Ti(IV)-DMF complex precursors
- P-8 Etsuko Tokunaga (Nagoya Institute of Technology)  
Super-sensitive Protonation Behavior of Trifluoroethoxy-substituted Phthalocyanines and Their Application to Solvent Discrimination
- P-9 Daiki Yamaoka (Tokyo Institute of Technology)  
Analysis of transporter which effects porphyrin metabolism in cancer cell line under treated hypoxic condition
- P-10 Arif Suprihadi (Tokyo Institute of Technology)  
The Effect of Heme Biosynthesis on the Electron Transport Chain in C2C12 cell line
- P-11 Hiroki Sato (Kwansei Gakuin University)  
Elucidation of suppression process of the generation of triplet bacteriochlorophyll *a* in LH1 antenna pigment-protein complexes from purple photosynthetic bacteria

- P-12 Taiki Inoue (Kwansei Gakuin University)  
Investigation of the optical properties of  $\beta$ -Apo-8'-carotenal using Stark spectroscopy
- P-13 Kota Horiuchi (Kwansei Gakuin University)  
Preparation of cis-trans isomers  $\beta$ -Apo-8'-carotenal and their femtosecond time-resolved absorption spectroscopic study
- P-14 Hiroaki Suzuki (Kwansei Gakuin University)  
Resonance Raman spectroscopy on fucoxanthin
- P-15 Yusuke Ban (Kwansei Gakuin University)  
Study on Stabilization of Fine Fe(0) particles on RGO
- P-16 Marina Yoshida, Mayu Mitarai (Kwansei Gakuin University)  
Reconstitution of carotenoids into the chromatophores from the carotenoidless mutant of *Rhodobacter sphaeroides* R26.1
- P-17 Yoshihiko Sera (Fuji Chemical Industries Co. Ltd., Kwansei Gakuin University)  
Synthesis of molybdenum chalcogenide/r-GO (reduced graphene oxide) composites as a hydrogen evolution catalyst
- P-18 Morito Kinjoh (University of the Ryukyus)  
Tandem Catalysis for Hydrogenation of Bicarbonate in Seawater
- P-19 Kota Tanabe (Kogakuin University)  
All-solid-state photovoltaic lithium-ion-battery by using thin films fabricated with molecular precursor method

*Posters for Bio-Division*

- BP-1 Shohei Moriya (Tokyo Institute of Technology)  
Influence of gas species and gas temperature on reactive species generation in atmospheric pressure plasma
- BP-2 Yuma Suenaga (Tokyo Institute of Technology)  
Investigation of bactericidal effect and factor in plasma bubbling disinfection using porous filter.
- BP-3 Ryotaro Tsunekawa (Tokyo Healthcare University, OSG Corporation Co., Ltd.)  
Primary investigation of bactericidal mechanism for spores using hypochlorous acid and hydrogen peroxide as oxidants
- BP-4 Tomoko Yamaguchi (Toin University)  
Effect of extracted coffee with various roasting and grinding conditions on physiological activities
- BP-5 Atsuo Iwasawa (Tokyo Healthcare University)  
A Study on bactericidal, fungicidal, and virucidal activity of Hypochlorous acid-based disinfectants
- BP-6 Shigemasa Katafuchi (Tokyo Healthcare University, Tokyo Nishitokushukai Hospital)  
Effect of non-woven fabric on the disinfection ability of benzalkonium chloride

*Posters for Junior Doctor Training School Program (JST Program at University of the Ryukyus)*

- JP-1 Sora Nakamura (Global Education Institute, University of the Ryukyus)  
Low-cost turbidimeter consisted of familiar products
- JP-2 Hinako Naka (Global Education Institute, University of the Ryukyus)  
Cooling effect derived from dissolution and mixing of salt



**産学連携拠点**

最先端の研究成果をいかして、  
光エネルギー利用技術開発と実用化に向けて取り組む

- ◆設備: **研究室(2F)と実験室(3F)**  
(6区画)、**高度分析装置(1F)**
- ◆時期: 2013年6月18日開所(3月竣工)

○光合成・人工光合成研究を中心とした次世代エネルギー創製等に関する4部門を設置し、多角的に共同利用・研究を進めることが可能

→基盤研究から応用展開研究・企業との共同研究まで受け入れ可能

国際的な人工光合成・再生可能エネルギー研究に対応



○各種高度分析装置の既設及びそれぞれに技術職員の配置がある

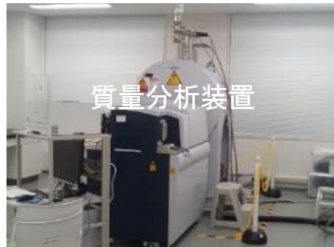
→測定から解析まで潤滑な研究推進が可能

○化学・生化学研究に対応可能な実験室を完備

→共同研究員派遣、研究実施に柔軟に対応可能

次世代エネルギー創製・環境問題解決を目標とした光合成・人工光合成に関する  
基盤技術を結集した研究拠点として広く活用可能

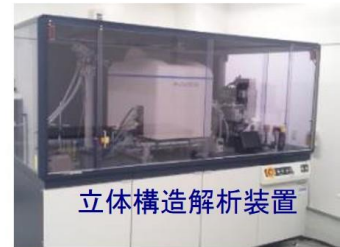
**人工光合成研究センター施設紹介**



新規化学物質・  
生体分子 分子1つの重さを測る



分子1つの化学構造を決定



分子1つの立体構造を決定



人工光合成研究に資する研究開発がすべて本拠点で実施可能



エネルギー・燃料分子の分析

大阪市立大学人工光合成研究センターは平成28年4月から文部科学省 共同利用・共同研究拠点「人工光合成研究拠点」として認定されました。

ホームページ: <http://www.recap.osaka-cu.ac.jp/index.html>

おかげ様で2018年6月をもって開所5周年を迎えました。