

Lecture Program

as of Feb. 28, 2017

| Thursday, March 2 | | | |
|-------------------------|------------------|---|---|
| Chair: Hideki HASHIMOTO | | | |
| 16:10-16:55 | PL-01 Plenary | <u>Richard J. COGDELL</u> , Hideki HASHIMOTO (Univ. of Glasgow, UK, Kwansei Gakuin Univ., Japan) | Novel approaches to the problem of how to use solar energy to make fuels |
| 16:55-17:20 | IL1-01 | <u>Hitoshi TAMIAKI</u> , Ayaka WADA, Sunao SHOJI (Ritsumeikan Univ., Japan) | Synthesis of zinc 20-substituted bacteriochlorophyll- <i>c</i> analogs and their chlorosomal self-aggregation |
| Chair: Richard COGDELL | | | |
| 17:30-18:05 | IL1-02 | Anthony HARRIMAN (Newcastle Univ., UK) | The concept of an artificial light-harvesting unit for photochemical energy transduction |
| 18:05-18:30 | IL1-03 | Shinji INAGAKI (Toyota Central R&D Labs., Inc., Japan) | Heterogeneous molecular photocatalysis for solar energy conversion |
| 18:30-19:05 | IL1-04 | <u>Charles MACHAN</u> , Clifford KUBIAK (Univ. of Virginia, Univ. of California, San Diego, USA) | Molecular electrocatalysts for the reduction of CO ₂ and the effects of bioinspired supramolecular assembly on mechanism |

Friday, March 3

Chair: Marc ROBERT

| | | | |
|----------------------|------------------|--|---|
| 9:00-9:45 | PL-02 Plenary | Daniel NOCERA (Harvard Univ., USA) | A complete carbon and nitrogen fixing cycle using sunlight, air and water |
| 9:45-10:20 | IL2-01 | Can LI (Chinese Academy of Sciences, China) | Charge separation in heterogeneous photocatalysts for artificial photosynthesis |
| Chair: Etsuko FUJITA | | | |
| 10:35-11:10 | IL2-02 | Jin-Ook BAEG (Korea Research Institute of Chemical Technology, South Korea) | A photocatalyst/biocatalyst integrated system for highly selective solar fuel/chemical production |
| 11:10-11:45 | IL2-03 | <u>Seigo SHIMA</u> , Ulrich ERMLER, Tristan WAGNER (Max Planck Institute, Germany) | The long and winding way from CO ₂ to methane |
| 11:45-12:10 | IL2-04 | Yutaka AMAO (Osaka City Univ., Japan) | Photoreduction properties of diphenyl-viologen derivative with water-soluble porphyrin and its application for C-C bond formation from carbon dioxide |
| Chair: Can LI | | | |
| 13:30-14:05 | IL2-05 | Marc ROBERT (Université Paris Diderot, France) | Molecular catalysis of the CO ₂ reduction with Fe complexes. From CO ₂ to CO and to more reduced products |
| 14:05-14:40 | IL2-06 | <u>Etsuko FUJITA</u> , Javier J. CONCEPCION, Mehmed Z. ERTEM, David C. GRILLS, Gerald F. MANBECK, James T. MUCKERMAN, Dmitry E. POLYANSKY, Kotaro SASAKI, Yuichiro HIMEDA (Brookhaven National Laboratory, USA, National Institute of Advanced Industrial Science and Technology, Japan) | Artificial photosynthesis for photogeneration of fuels |
| 14:40-15:15 | IL2-07 | Kyung Byung YOON (Sogang Univ., South Korea) | Electrochemical and molecular approaches for artificial photosynthesis |

| | | | |
|--------------------|--------|--|--|
| 15:15-15:40 | IL2-08 | <u>Takeshi MORIKAWA</u> , Shunsuke SATO, Takeo ARAI, Keita SEKIZAWA, Tomiko M. SUZUKI (Toyota Central R&D Labs., Inc., Japan) | A hybrid photosystem composed of metal-complex catalysts and semiconductors for highly efficient CO ₂ reduction |
| Chair: Yutaka AMAO | | | |
| 16:00-16:25 | IL2-09 | <u>Kazuhiro SAYAMA</u> , Kojiro FUKU, Yugo MISEKI (AIST, Japan) | Photoelectrochemical production of hydrogen and high - value - added oxidation reagents |
| 16:25-16:50 | IL2-10 | Hiroaki MISAWA (Hokkaido Univ., Japan) | Plasmon-assisted artificial photosynthesis |
| 16:50-17:25 | IL2-11 | Yang-Jin CHO, Soyeon KIM, Chul Hoon KIM, Ho-Jin SON, Chyongjin PAC, Dae Won CHO, <u>Sang Ook KANG</u> (Korea Univ., South Korea) | Photochemistry and photophysics of bimetallic iridium complexes |
| 17:25-18:00 | IL2-12 | Leif HAMMARSTRÖM (Uppsala Univ., Sweden) | Molecular and biomimetic approaches to artificial photosynthesis |

Saturday, March 4

Chair: Leif HAMMARSTRÖM

| | | | |
|-----------------------|--------|---|--|
| 9:00-9:25 | IL3-01 | <u>Nobuo KAMIYA</u> , Ayako TANAKA, Shohei DAIKOU, Keisuke KAWAKAMI, Masayoshi FUKUSHIMA (Osaka City Univ., Japan) | Flexibility and pH-dependence of oxygen-evolving complex in photosystem II found at extremely low X-ray doses |
| 9:25-9:50 | IL3-02 | Jian-Ren SHEN (Okayama Univ., Japan) | Mechanism of photosynthetic water-splitting based on the atomic structure of photosystem II |
| 9:50-10:15 | IL3-03 | <u>Kazuhito INOUE</u> , Masaharu KITASHIMA, Kenji V. P. NAGASHIMA, Hidehiro SAKURAI, Takeshi SATO (Kanagawa Univ., Japan) | Improved light energy efficiency of photobiological hydrogen production in stacked bioreactors using cyanobacteria and purple bacteria |
| Chair: Jian-Ren SHEN | | | |
| 10:30-11:05 | IL3-04 | Vincent ARTERO (Univ. Grenoble Alpes, CEA Grenoble, France) | Molecular-based H ₂ -evolving photocathodes |
| 11:05-11:30 | IL3-05 | Masayuki YAGI (Niigata Univ., Japan) | Mechanistic insight of O-O bond formation for water oxidation catalysis by dinuclear ruthenium complexes |
| 11:30-11:55 | IL3-06 | <u>Shigeyuki MASAOKA</u> , Masaya OKAMURA, Mio KONDO (Institute for Molecular Science, Japan) | A penta-iron water oxidation catalyst |
| Chair: Vincent ARTERO | | | |
| 13:30-14:05 | IL3-07 | <u>Michael WASIELEWSKI</u> , Rebecca J. KAMIRE, Kelly L. MATERNA, William L. HOFFEDITZ, Brian T. PHELAN, Julianne M. THOMSEN, Omar K. FARHA, Joseph T. HUPP, Gary W. BRUDVIG (Northwestern Univ., Yale Univ., USA) | Photodriven oxidation of surface-bound iridium-based molecular water-oxidation catalysts on perylene-3,4-dicarboximide-sensitized TiO ₂ electrodes protected by an Al ₂ O ₃ layer |

| | | | |
|-------------------------|--------|---|---|
| 14:05-14:30 | IL3-08 | <u>Haruo INOUE</u> , Fazalrahman KUTTASSERY, Siby MATHEW, Sebastian REMELLO, Arun THOMAS, Daisuke YAMAMOTO, Satomi ONUKI, Yu NABETANI, Hiroshi TACHIBANA (Tokyo Metropolitan Univ., Miyazaki Univ., Japan) | One-electron initiated two-electron oxidation of water catalyzed by molecular catalysts composed of earth abundant elements |
| 14:30-14:55 | IL3-09 | Akihiko KUDO (Tokyo Univ. of Science, Japan) | Water splitting and CO ₂ reduction using powdered photocatalyst materials |
| 14:55-15:20 | IL3-10 | <u>Takashi HISATOMI</u> , Kazunari DOMEN (The Univ. of Tokyo, ARPCChem, Japan) | Development of particulate photocatalyst sheets for scalable and efficient water splitting under sunlight |
| Chair: Kyung Byung YOON | | | |
| 15:40-16:05 | IL3-11 | Ryu ABE (Kyoto Univ., JST-CREST, Japan) | Photocatalytic water splitting under visible light based on Z-scheme mechanism |
| 16:05-16:30 | IL3-12 | <u>Yoshihiko IMANAKA</u> , Toshihisa ANAZAWA, Toshio MANABE, Hideyuki AMADA, Sachio IDO, Fumiaki KUMASAKA, Naoki AWAJI, Ryo ISHIKAWA, Yuichi IKUHARA (Fujitsu Laboratories Ltd., Univ. of Tokyo, Japan) | Artificial photosynthesis anode electrode composed of photocatalyst film produced by nanoparticle deposition |
| 16:30-17:05 | IL3-13 | <u>Devens GUST</u> , Thomas A. MOORE, Ana L. MOORE (Arizona State Univ., USA) | Photoelectrochemical cells for solar fuel production |

Sunday, March 5

Chair: Michael WASIELEWSKI,

| | | | |
|-----------------------|--------|---|--|
| 9:00-9:25 | IL4-01 | Osamu ISHITANI (Tokyo Institute of Technology, Japan) | Hybrid photocatalysts consisting of metal complexes and semiconductors for CO ₂ reduction |
| 9:25-9:50 | IL4-02 | Ken SAKAI (Kyushu Univ., Japan) | Molecular catalysts and photocatalysts for water splitting |
| 9:50-10:15 | IL4-03 | <u>Shinsuke TAKAGI</u> , Takamasa TSUKAMOTO, Daichi TATSUMI, Tetsuya SHIMADA (Tokyo Metropolitan Univ., Tokyo Institute of Technology, Japan) | Photochemical epoxidation with light harvesting functionality on the inorganic surfaces |
| Chair: Osamu ISHITANI | | | |
| 10:30-10:55 | IL4-04 | Shin-ichi ADACHI (IMSS, KEK, Japan) | Capturing structural dynamics of photocatalyst by ultrafast X-ray spectroscopy |
| 10:55-11:20 | IL4-05 | Ken ONDA (JST-PRESTO, Tokyo Institute of Technology, Japan) | Non-radiative processes in photoenergy conversion systems studied by time-resolved infrared spectroscopy |
| 11:20-11:45 | IL4-06 | <u>Hideki HASHIMOTO</u> , Nao YUKIHIRA, Hiroki SATO, Masazumi FUJIWARA, Yuko SUGAI, Tomoko HORIBE, Daisuke KOSUMI, Alastair T. GARDINER, Richard J. COGDELL (Kwansei Gakuin Univ., Kumamoto Univ., Japan, Univ. of Glasgow, UK) | Excitation energy transfer and dissipation dynamics of carotenoids in photosynthetic antenna systems |