

June 17, Saturday

Opening remarks: 9:00–9:10 Hitoshi Tamiaki (Chairman, *Ritsumeikan Univ.*)

PL-1 9:10–10:00 (Chairperson: Hitoshi Tamiaki, *Ritsumeikan Univ.*)
How Nature Makes Tetrapyrroles - Interesting Steps along the Way
Martin J. Warren
Univ. Kent, Canterbury, UK

O-1 10:00–10:30 (H. Tamiaki)
Biosynthesis of Bacteriochlorophyll *e* Driving the Large Antenna System in
Photosynthetic Brown-Colored Green Sulfur Bacteria
Jiro Harada
Kurume Univ. Sch. Med., Kurume, Japan

Coffee break: 10:30–10:40

O-2 10:40–11:10 (Chairperson: Martin J. Warren, *Univ. Kent.*)
Visible Light Induced Formic Acid Production from CO₂ with the Biocatalyst and
Porphyrin
Syusaku Ikeyama, Yutaka Amao
Osaka City Univ., Osaka, Japan

O-3 11:10–11:30 (M. Warren)
Pyrrole-Based Anion-Responsive π -Electronic Molecules as Hydrogen-Bonding
Organocatalysts
Goki Hirata, Hiromitsu Maeda
Ritsumeikan Univ., Kusatsu, Japan

S-1 11:30–11:40 (M. Warren)
(P-3) Photo-Sensitized Energy Transfer of Seven-Coordinate Terbium Complexes
Pedro Paulo Ferreira da Rosa¹, Yuichi Kitagawa¹, Takayuki Nakanishi², Koji
Fushimi¹, Yasuchika Hasegawa¹
¹*Hokkaido Univ., Sapporo, Japan*; ²*Tokyo Univ. Sci., Katsushika, Japan*

S-2 11:40–11:50 (M. Warren)
(P-44) Synthesis of Cationic Pyridinium-Chlorophyll Conjugates and Their Optical
Properties
Tatsuya Takahashi, Shin Ogasawara, Hitoshi Tamiaki
Ritsumeikan Univ., Kusatsu, Japan

Group Photo: 11:50 (Elevater Hall)

Lunch: 12:00–13:00

Poster session: 13:00–14:30 (K309)

Odd number poster presenters, please stand by during 13:00–13:45.

Even number poster presenters, please stand by during 13:45–14:30.

- O-4** 14:40–15:10 (Chairperson: Hiromitsu Maeda, *Ritsumeikan Univ.*)
The Construction of Artificial Selenoenzymes: From Single-Molecule Design to Supramolecular Assembly
Quan Luo, Junqiu Liu
Jilin Univ., Changchun, China
- O-5** 15:10–15:40 (H. Maeda)
An Array of Metal Porphyrinoid Chromophores Using Hemoprotein Assembly as a Scaffold
Koji Oohora,^{1,2} Takashi Hayashi¹
¹*Osaka Univ., Suita, Japan*; ²*PRESTO, JST, Kawaguchi, Japan*
- O-6** 15:40–16:10 (H. Maeda)
Energy Transfer Reaction in Lipid Domain Incorporated Fluorophores
Tomomi Koshiyama
Ritsumeikan Univ., Kusatsu, Japan

Coffee break: 16:10–16:20

- O-7** 16:20–16:50 (Chairperson: Quan Luo, *Jilin Univ.*)
Top-Down Approach for Production of Carbon Nanosheets
Yuta Nishina^{1,2}
¹*Okayama Univ., Okayama, Japan*; ²*Osaka Univ., Ibaraki, Japan*
- O-8** 16:50–17:20 (Q. Luo)
Self-Assembled Optical Microcavities from π -Conjugated Molecules and Polymers
Yohei Yamamoto
Univ. Tsukuba, Tsukuba, Japan
- O-9** 17:20–17:50 (Q. Luo)
Synthesis of Carbazole-Based Porphyrins and BODIPYs
Chihiro Maeda
Okayama Univ., Okayama, Japan

Closing remarks: 17:50–18:00 Hiromitsu Maeda (*Ritsumeikan Univ.*)

Banquet: 18:10– (K309)

Poster Session (K309)

Please mount your poster by the noon of June 16 and stand by it during the following time: odd number, 13:00–13:45; even number, 13:45–14:30.

- P-1** Effect of Gold and Silver Nanoparticles Thin-Film on Excitation of Fluorescent Dyes
Tsuyoshi Akiyama¹, Shota Mitukawa¹, Natsuki Koyama¹, Anawat Ajavakom², Vachiraporn Ajavakom³, Atsushi Suzuki¹, Takeo Oku¹
¹*Univ. Shiga Pref., Hikone, Japan;* ²*Chulalongkorn Univ., Bangkok, Thailand;* ³*Ramkhamhaeng Univ., Bangkok, Thailand*
- P-2** Synthesis of Chlorophyll Derivatives Fused with an Additional *exo*-Ring at the 3,5-Positions
Marie Doi, Hitoshi Tamiaki
Ritsumeikan Univ., Kusatsu, Japan
- P-3** Photo-Sensitized Energy Transfer of Seven-Coordinate Terbium Complexes
Pedro Paulo Ferreira da Rosa¹, Yuichi Kitagawa¹, Takayuki Nakanishi², Koji Fushimi¹, Yasuchika Hasegawa¹
¹*Hokkaido Univ., Sapporo, Japan;* ²*Tokyo Univ. Sci., Katsushika, Japan*
- P-4** Photoinduced Topographical Changes on Microcrystalline Film of the Mixture of Two Diarylethenes
Ayako Fujimoto¹, Kengo Hyodo¹, Masakazu Morimoto², Hiroyuki Mayama³, Satoshi Yokojima⁴, Shinichiro Nakamura⁵, Kingo Uchida¹
¹*Ryukoku Univ., Seta, Japan;* ²*Rikkyo Univ., Toshima, Japan;* ³*Asahikawa Med. Univ., Asahikawa, Japan;* ⁴*Tokyo Univ. Pharm. Life Sci., Hachioji, Japan;* ⁵*RIKEN, Wako, Japan*
- P-5** Creation of Phototactic CheA - Chimerization of Two Different Classes of Histidine Kinases -
Yusuke Fukuhara, Mamiko Shimoji, Masahiro Kasahara, Kazuki Terauchi, Chihiro Azai
Ritsumeikan Univ., Kusatsu, Japan
- P-6** Synthesis of Radially Arranged Oligomers of Anion-Responsive π -Electronic Molecules
Shin Fukukawa, Kazuto Nakamura, Yohei Haketa, Hiromitsu Maeda
Ritsumeikan Univ., Kusatsu, Japan
- P-7** Synthesis of Covalently Linked Pyropheophorbide Dimer with a Cyclohexadiene Unit at the C3-Position
Naoya Funayama, Hitoshi Tamiaki
Ritsumeikan Univ., Kusatsu, Japan

- P-8** Ion-Pairing Dimension-Controlled Assemblies Based on π -Electronic Ions
Yohei Haketa, Hiromitsu Maeda
Ritsumeikan Univ., Kusatsu, Japan
- P-9** Evaporation-Based Selection of Supramolecular Chirality of Polythiophene Aggregates
Shingo Hattori¹, Stefaan Vandendriessche², Toshiyuki Hirano¹, Fumitoshi Sato¹,
Guy Koeckelberghs², Thierry Verbiest², Kazuyuki Ishii¹
¹*Univ. Tokyo, Meguro, Japan*; ²*KU Leuven, Leuven, Belgium*
- P-10** Cell-Penetrative Activities of Cationic Polymers Possessing Ammonium or Guanidinium Groups: Application for ATP Assays
Yuri Hayashi, Tomohiro Miyatake
Ryukoku Univ., Seta, Japan
- P-11** Aggregation Behavior and Optical Properties of 17-Functionalized Chlorophyll-*b*, *d* derivatives in a Lipid Bilayer
Ayu Horiuchi, Noriaki Nishimura, Tomohiro Miyatake
Ryukoku Univ., Seta, Japan
- P-12** Preparation and Photoelectrochemical Properties of C₆₀-Ethylenediamine Adduct Particles-Silver Nanoparticles Composite Micropowders
Ippei Hosoi¹, Tsuyoshi Akiyama¹, Takeo Oku¹, Ken-ichi Matsuoka², Sunao Yamada²
¹*Univ. Shiga Pref., Hikone, Japan*; ²*Kyushu Univ., Fukuoka, Japan*
- P-13** Self-Aggregates of Amphiphilic Chlorophyll Derivatives Possessing Carbonyl Groups at the Various Positions
Naohiro Hosomi¹, Hitoshi Tamiaki², Tomohiro Miyatake¹
¹*Ryukoku Univ., Seta, Japan*; ²*Ritsumeikan Univ., Kusatsu, Japan*
- P-14** Synthesis of π -Electronic Systems Comprising Pyrrole Derivatives with Strong Electron-Withdrawing Groups
Shota Ikeuchi, Yohei Haketa, Kazuto Nakamura, Hiromitsu Maeda
Ritsumeikan Univ., Kusatsu, Japan
- P-15** Self-Aggregation of Synthetic Bacteriochlorophyll-*d* Analogs Possessing an Ethyl, Vinyl, or Ethynyl Group at the 3¹ Position
Seiji Kanehisa, Hitoshi Tamiaki
Ritsumeikan Univ., Kusatsu, Japan
- P-16** Supramolecular Self-Assembly of Porphyrins in Non-Equilibrium Microflow Space
Chisako Kanzaki, Munenori Numata
Kyoto Pref. Univ., Kyoto, Japan

- P-17** The Chlorophyll Cycle in the Secondary Plant *Euglena gracilis*
Yuichiro Kashiya^{1,2}, Moe Maruyama¹, Shiori Shibata³, Koichiro Awai³, Masami Nakazawa⁴, Takahiro Ishikawa⁵
¹Fukui Univ. Technol., Fukui, Japan; ²Ritsumeikan Univ., Kusatsu, Japan;
³Shizuoka Univ., Shizuoka, Japan; ⁴Osaka Pref. Univ., Sakai, Japan; ⁵Shimane Univ., Matsume, Japan
- P-18** Stereoselective Self-Aggregation of Zinc 3-Hydroxymethyl-Chlorins Bearing an Alkoxyimino Group at the 13¹-Position
Airi Katayama, Hitoshi Tamiaki
Ritsumeikan Univ., Kusatsu, Japan
- P-19** Bio- and Chemical Preparation of Divinyl-13²,17³-Cyclophosphorbinone Enol
Yusuke Kinoshita¹, Yuichiro Kashiya^{1,2}, Hitoshi Tamiaki¹
¹Ritsumeikan Univ., Kusatsu, Japan; ²Fukui Univ. Tech., Fukui, Japan
- P-20** Synthesis and Self-Aggregation of Zinc Chlorophyll Analogues Bearing the 20-Substituent with an Oxygen Atom
Masashi Kishi, Hitoshi Tamiaki
Ritsumeikan Univ., Kusatsu, Japan
- P-21** Effects of Formamidine and Guanidine Iodides Addition to CH₃NH₃PbI₃ Perovskite Solar Cells
Taku Kishimoto, Atsushi Suzuki, Takeo Oku
Univ. Shiga Pref., Hikone, Japan
- P-22** A Highly Luminescent Eu(III) Complex Based on Electronically Isolated Aromatic Ring System with Ultralong Lifetime
Yuichi Kitagawa¹, Fumiya Suzue¹, Takayuki Nakanishi², Koji Fushimi¹, Yasuchika Hasegawa¹
¹Hokkaido Univ., Sapporo, Japan; ²Tokyo Univ. Sci., Katsushika, Japan
- P-23** Anion-Responsive π -Electronic Systems with Orthogonally Introduced π -Moiety Providing Dimension-Controlled Assemblies
Naoya Koda, Hiromitsu Maeda
Ritsumeikan Univ., Kusatsu, Japan
- P-24** Fabrication of Titanium Oxide-Silver Nanoparticles Composite Thin-Films and Their Photochemical Properties
Natsuki Koyama, Tsuyoshi Akiyama, Shota Mitsukawa, Takeo Oku
Univ. Shiga Pref., Hikone, Japan
- P-25** Synthesis of Anion-Responsive π -Electronic Molecules Exhibiting Various Binding Behaviors
Atsuko Kuno, Hiromitsu Maeda
Ritsumeikan Univ., Kusatsu, Japan

- P-26** Fabrication and Evaluation of Inorganic Phosphorescent Materials Incorporated Organic Thin-Film Solar Cells
Yusuke Matsumiya, Tsuyoshi Akiyama, Takeo Oku
Univ. Shiga Pref., Hikone, Japan
- P-27** Synthesis of Deuterated Chlorophyll Derivatives and Their Physical Properties
Takuya Miyanishi, Hitoshi Tamiaki
Ritsumeikan Univ., Kusatsu, Japan
- P-28** Synthesis and Assemblies of Heterocycle-Bridged Dipyrrolyl π -Electronic Molecules
Mika Miyasue, Yohei Haketa, Hiromitsu Maeda
Ritsumeikan Univ., Kusatsu, Japan
- P-29** Synthesis and Circular Polarized Luminescence of Carbazole-Based BODIPYs with Chiral Binaphthyl Unit
Chihiro Maeda, Keiji Nagahata, Kazuto Takaishi, Tadashi Ema
Okayama Univ., Okayama, Japan
- P-30** Synthesis of Space-Controllable Anion-Responsive π -System Dimers
Atsushi Naganawa, Hiromitsu Maeda
Ritsumeikan Univ., Kusatsu, Japan
- P-31** Preparation of Isomers of Bacteriochlorophyll *a* Derivatives for Investigation of Their Structural Effects on Reconstitution into LH2 Protein from the Purple Photosynthetic Bacterium *Rhodoblastus acidophilus*
Yoshitaka Saga, Shiori Nakagawa, Kanji Miyagi
Kindai Univ., Higashi-Osaka, Japan
- P-32** Assembled Behaviors and Functionalization of Polarity-Switchable π -Systems
Kazuto Nakamura, Hiromitsu Maeda
Ritsumeikan Univ., Kusatsu, Japan
- P-33** Regioselective C20-Fluorination of Chlorophyll Derivatives and Their Optical Properties
Kohei Nakano, Shin Ogasawara, Hitoshi Tamiaki
Ritsumeikan Univ., Kusatsu, Japan
- P-34** Pyrrole-Based Anion-Responsive π -Electronic Molecules Providing Oligomeric Structures
Kenta Nishiyama, Yohei Haketa, Hiromitsu Maeda
Ritsumeikan Univ., Kusatsu, Japan
- P-35** Synthetic Chlorophyll Derivatives Linked with a Chalcone Moiety at the C3 Position Bearing Different Fundamental π Skeletons
Kota Ohashi, Yusuke Kinoshita, Hitoshi Tamiaki
Ritsumeikan Univ., Kusatsu, Japan

- P-36** Spectral Changes of LH2 Protein from the Purple Photosynthetic Bacterium *Rhodoblastus acidophilus* by Treatment with an Oxidant
Yoshitaka Saga, Yuji Otsuka, Kiyoshiro Kawano, Madoka Yamashita
Kindai Univ., Higashi-Osaka, Japan
- P-37** Effects of Solvent for Construction of Chlorophyll-Based Bulk-Heterojunction Organic-Inorganic Solar Cells
Shin-ichi Sasaki^{1,2}, Wenjie Zhao³, Hitoshi Tamiaki², Xiao-Feng Wang³
¹*Nagahama Inst. Bio-Sci. Tech., Nagahama, Japan*; ²*Ritsumeikan Univ., Kusatsu, Japan*; ³*Jilin Univ., Changchun, China*
- P-38** Ion-Pairing Assemblies Based on Porphyrin Anions
Yoshifumi Sasano, Hiromitsu Maeda
Ritsumeikan Univ., Kusatsu, Japan
- P-39** Self-Aggregates of a Zinc Bacteriochlorophyll-*d* Analog Having Didodecylamide in the 17-Substituent
Sunao Shoji¹, Marius Wehner², Wolfgang Wagner², Vladimir Stepanenko², Frank Würthner², Hitoshi Tamiaki¹
¹*Ritsumeikan Univ., Kusatsu, Japan*; ²*Univ. Würzburg, Würzburg, Germany*
- P-40** Synthesis and Assemblies of Anion-Responsive Molecules Comprising π -Extended Pyrrole Units
Shinya Sugiura, Hiromitsu Maeda
Ritsumeikan Univ., Kusatsu, Japan
- P-41** Insert Effects of Phthalocyanine Complexes into Perovskite Solar Cells
Atsushi Suzuki¹, Hiroki Okumura¹, Yasuhiro Yamasaki², Takeo Oku¹
¹*Univ. Shiga Pref., Hikone, Japan*; ²*Orient Chem. Ind. Co. Ltd., Neyagawa, Japan*
- P-42** Electronic Structures of Alkali Metals (Li, Na, K or Rb)-Incorporated Formamidinium Lead Halide Perovskite Compounds
Atsushi Suzuki, Takeo Oku
Univ. Shiga Pref., Hikone, Japan
- P-43** Roles of Polymer Layer in Photovoltaic Properties and Morphology of Perovskite Solar Cells
Masaya Taguchi, Atsushi Suzuki, Takeo Oku
Univ. Shiga Pref., Hikone, Japan
- P-44** Synthesis of Cationic Pyridinium-Chlorophyll Conjugates and Their Optical Properties
Tatsuya Takahashi, Shin Ogasawara, Hitoshi Tamiaki
Ritsumeikan Univ., Kusatsu, Japan
- P-45** Ion-Pairing Assemblies Based on Porphyrin Au^{III} Complexes
Hiroki Tanaka, Yohei Haketa, Hiromitsu Maeda
Ritsumeikan Univ., Kusatsu, Japan

- P-46** An Anomalous Antiaromaticity that Arises from the Cycloheptatrienyl Anion Equivalent
Keiji Uehara, Naoki Aratani, Hiroko, Yamada
Nara Inst. Sci. Tech., Ikoma, Japan
- P-47** Effects of Addition of PbI₂ and TiO₂ Nanoparticles to CH₃NH₃PbI_{3-x}Cl_x Solar Cells
Naoki Ueoka¹, Takeo Oku¹, Atsushi Suzuki¹, Hiroki Sakamoto², Masahiro Yamada², Satoshi Minami², Masanobu Ohkita²
¹*Univ. Shiga Pref., Hikone, Japan;* ²*Osaka Gas Co. Ltd., Osaka, Japan*
- P-48** Fabrication and Characterization of CH₃NH₃Pb_{1-x}Sb_xI_{3-2x}Br_{3x} Perovskite Solar Cells
 Takeo Oku, Jun Yamanouchi, Misaki Fukaya, Naoki Ueoka, Atsushi Suzuki
Univ. Shiga Pref., Hikone, Japan
- P-49** Synthesis of Arylethynyl-Substituted Anion-Responsive π -Electronic Systems Providing Dimension-Controlled Assemblies
Yuta Watanabe, Yohei Haketa, Kazuto Nakamura, Hiromitsu Maeda
Ritsumeikan Univ., Kusatsu, Japan
- P-50** Development of Bilayer Chlorophyll-Based Solar Cells Mimicing the Z-Scheme Process of Oxygenic Photosynthesis
Yuya Yamamoto¹, Shengnan Duan², Xiao-Feng Wang², Hitoshi Tamiaki³, Toshitaka Ikeuchi¹, Shin-ichi Sasaki^{1,3}
¹*Nagahama Inst. Bio-Sci. Tech., Nagahama, Japan;* ²*Jilin Univ., Changchun, China;* ³*Ritsumeikan Univ., Kusatsu, Japan*
- P-51** Reconstitution of Chlorophyll Derivatives into the LH2 Protein from the Purple Photosynthetic Bacterium *Rhodoblastus acidophilus*
Madoka Yamashita, Yoshitaka Saga
Kindai Univ., Higashi-Osaka, Japan