ICTPPO2023 program

Oral session

Day 1, 19 September (Tuesday)

14:00 16:00	On site registration			
16:00	Opening ceremony	Tatsuru Masuda		
Pleanary lectures				
	Chair: Yuichi Fujita			
16:15	Plenary lecture 1	David Kehoe	Indiana University, USA	Control of photosynthetic antennae biogenesis by light color in marine phytoplankton
	Chair: Bernhard Kräutler			
17:15	Plenary lecture 2	Hitoshi Tamiaki	Ritsumeikan University, Japan	Chlorophylls and their synthetic analogs
18:30	Welcome party			

Day 2, 20 September (Wednesday)

Session 1: Metabolism and catabolism of tetrapyrroles				
	Chair: Ryoichi Tanaka			
8:30	Selected speaker 1 (25 min)	Bernhard Grimm	Humboldt-Universität zu Berlin, Germany	Multiple regulatory effects on the synthesis of 5-aminolevulinic acid by auxiliary and regulatory factors
8:55	Selected speaker 2 (25 min)	Roman Sobotka	Czech Academy of Sciences, Czech	Regulation and the regulatory role of photosynthetic ferrochelatase
9:20	Selected speaker 3 (25 min)	Jennifer Bridwell-Rabb	University of Michigan, USA	A metalloprotein catalyzed transformation in chlorophyll metabolism
	Chair: Haruki Yamamoto			
9:45	Selected speaker 4 (25 min)	Hisashi Ito	Hokkaido University, Japan	Functional and structural analysis of Mg-dechelatase involved in chlorophyll degradation
10:10	Selection from poster 1 (15 min)	Dowrung Namoon	University of Liverpool, United Kingdom	Assembly of a foreign photosynthetic antenna
10:25	Coffee break			
Session 2: Chloroplast biogenesis and retrograde signaling				
	Chair: Sho Fujii			
10:40	Selected speaker 1 (25 min)	Michal Gabruk	Jagiellonian University, Poland	The formation and the disassembly of prolamellar body are driven by LPOR
11:05	Selected speaker 2 (25 min)	Hsou-min Li	Academia Sinica, Taiwan	Protein import into plastids: better signals and a better bridge

11:30	Selected speaker 3 (25 min)	Matthew J Terry	University of Southampton, UK	The role of tetrapyrroles in retrograde signalling
11:55	Lunch (Mugibatake)			
	Chair: Koichi Kobayashi			
13:45	Selection from poster 1 (15 min)	Chanhong Kim	Chinese Academy of Sciences, China	GUN1-dependent biogenic thermal stress responses
14:00	Selected speaker 4 (25 min)	Tatsuru Masuda	The University of Tokyo, Japan	Functional analysis of heme-transporters in plant cells
14:15	Selection from poster 2 (15 min)	Deqiang Duanmu	Huazhong Agricultural University, China	Roles of leghemoglobins and heme catabolism in symbiotic nitrogen fixation in Legume nodules
Session 3: Chemistry and theory of tetrapyrroles				
	Chair: Hitoshi Tamiaki			
14:30	Selected speaker 1 (25 min)	Bernhard Kräutler	University of Innsbruck, Austria	Novel chemistry of chlorophyll breakdown in vascular plants
14:55	Selected speaker 2 (25 min)	Yuichiro Kashiyama	Fukui University of Technology, Japan	Biochemical elucidation of CPE-accumulating chlorophyll catabolism conserved among diverse eukaryotes
15:20	Coffee break			
	Chair: Yoshitaka Saga			
15:35	Selected speaker 3 (25 min)	Min Chen	University of Sydney, Australia	Red-shifted chlorophylls and their biosynthetic mechanisms
15:50	Selected speaker 4 (25 min)	Igor Schapiro	The Hebrew University of Jerusalem, Israel	Insight into the photochemistry of cyanobacteriochromes by QM/MM simulations
16:15	Selection from poster 1 (15 min)	Yutaka Ukaji	Kanazawa University, Japan	Total synthesis of regioselectively ^{15}N-labeled tetrapyrrole chromophores
	Chair: Yuichi Fujita			
16:30	Poster presentation flash talk (2 min)			
17:10	Poster presentation			
19:00	Dinner (Take by yourself)			

Day 3, 21 September (Thursday)

Mini-session: Bilin biosynthesis				
	Chair: Nicole Frankenberg-Dinkel			
8:30	Selection from poster 1 (15 min)	Federica Frascogna	RPTU Kaiserslautern, Germany	On the evolution of the plant phytochrome chromophore biosynthesis
8:45	Selection from poster 2 (15 min)	Masakazu Sugishima	Kurume University School of Medicine, Japan	Structural analysis of plant phytochromobilin synthase

9:00	Selection from poster 3 (15 min)	Chen Yingxi	The University of Tokyo, Japan	Cytoplasmic heme decomposition by heme oxygenase 1 produced by transcription start sites regulation is critical for chloroplast biogenesis
Session 4: Bilin-based optogenetics and imaging				
	Chair: Rei Narikawa			
9:15	Selected speaker 1 (25 min)	Kazuhiro Aoki	National Institutes of Natural Sciences, Japan	Genetically encoded phycocyanobilin synthesis, SynPCB, and its application to optogenetics and live-cell imaging
9:40	Selection from poster 1 (15 min)	Ting-So Liu	National Taiwan University, Taiwan	Identification of a far-red light-inducible promoter that exhibits light intensity dependency and reversibility in a Cyanobacterium
9:55	Selected speaker 2 (25 min)	Moritoshi Sato	The University of Tokyo, Japan	Optical manipulation of the genome
10:20	Coffee break			
	Chair: Moritoshi Sato			
10:35	Selection from poster 2 (15 min)	Kun Tang	Heinrich-Heine-Universität, Germany	Cyanobacteriochrome-based optogenetic tools for gene expression and subcellular protein localization
10:50	Selected speaker 3 (25 min)	Minghai Chen	Shenzhen Institute of Advanced Technology, Chinese Academy of Sciences, China	Near-infrared phytochrome based fluorescence complementation for imaging of protein-protein interactions in living cells and in vivo
11:15	Selected speaker 4 (25 min)	Robert E. Campbell	The University of Tokyo, Japan	Near-Infrared fluorescent calcium ion biosensors based on engineered biliverdin-binding proteins
11:40	Lunch box			
14:00	Excursion			
18:30	Banquet			

Day 4, 22 September (Friday)

Session 5: Bili-based antenna proteins				
	Chair: Yuu Hirose			
8:30	Selected speaker 1 (25 min)	Jindong Zhao	Peking University	Distribution of PBS-absorbed light energy between PSII and PSI in Cyanobacteria
8:55	Selection from poster 1 (20 min)	Ming-Yang Ho	National Taiwan University	A relict paddle-shaped phycobilisome structure discovered from a thylakoid-free Cyanobacterium
9:15	Selected speaker 2 (25 min)	Noam Adir	Israel Institute of Technology	Extreme heterogeneity in the *A. marina* phycobilisome

	Chair: Rei Narikawa			
9:40	Selected speaker 3 (25 min)	Nicole Frankenberg-Dinkel	Technische Universität Kaiserslautern-Landau	What can we learn from viral photosynthesis?
10:05	Selected speaker 4 (20 min)	Yuu Hirose	Toyohashi University of Technology	Absorption tuning mechanism of the chromatic acclimation sensor in Cyanobacteria
10:25	Coffee break			
Session 6: Bilin-based photoreceptors				
	Chair: Rei Narikawa			
10:40	Selected speaker 1 (25 min)	Tomotsumi Fujisawa	Saga University, Japan	Photoconversion mechanism of a green/red cyano-bacteriochrome based on its molecular structure
11:05	Selected speaker 2 (25 min)	Gen Enomoto	University of Electro-Communications, Japan	The light-dependent induction of cell polarity and the switching of moving direction in the rod-shaped cyanobacterium *Thermosynechococcus*
11:30	Selected speaker 3 (25 min)	Xiaojing Yang	University of Illinois Chicago, USA	Light signaling and allostery mechanisms of bacteriophytochromes
11:55	Selected speaker 4 (25 min)	Nathan C. Rockwell	University of California at Davis, USA	A conserved cyanobacteriochrome in early-branching cyanobacteria
12:20	Lunch (Palo)			
	Chair: Yuu Hirose			
14:00	Selection from poster 1 (15 min)	Hiroki Hoshino	Tokyo Metropolitan University, Japan	Molecular evolution of the novel DXCIP cyanobacteriochrome to sense blue light by using inserted Cys residue
14:15	Selection from poster 2 (15 min)	Laura Jeffreys	The University of Manchester, United Kingdom	Photocobilins utilise B12 and bilin cofactors for photochemistry spanning the full visible spectrum
Session 7: Artificial photosynthesis				
	Chair: Min Chen			
14:30	Selected speaker 1 (25 min)	Koji Oohora	Osaka University, Japan	Hemoprotein assembly containing porphyrinoid photosensitizers toward an artificial light-harvesting system
14:55	Selected speaker 2 (25 min)	Dror Noy	Migal Galilee Research Institute & Tel-Hai Academic College, Israel	Computational design of water-soluble chlorophyll-binding
15:20	Selection from poster 1 (15 min)	Yoshitaka Saga	Kindai University, Japan	Modification of B800 bacteriochlorophyll a in peripheral light-harvesting proteins of purple photosynthetic bacteria
15:35	Closing ceremony	Tatsuru Masuda		
16:00	Departure			

Poster Session

Session 1: Metabolism and catabolism of tetrapryrroles			
P1-1	Yuusuke Tsukatani	Japan Agency for Marine-Earth Science and Technology (JAMSTEC), Japan	Novel enzymatic activities of geranylgeranyl reductase from *Halorhodospira halochloris* , resulting in the production of bacteriochlorophyll with an unusual phytadienyl tail
P1-2	Haruki Yamamoto	Nagoya University, Japan	Light and oxygen requirements for chlorophyll *d* biosynthesis on marine cyanobacterium *Acaryochloris marina*
P1-3	Kazuki Terauchi	Ristumeikan University, Japan	Genes encoding dark-operative protochlorophyllide oxidoreductase in the nonphotosynthetic plastid genome of a novel coralinhabiting apicomplexan *Corallicola aquarius*
P1-4	Ji Won Kim	Nagoya University, Japan	Analysis of etiolation process of a cyanobacterial mutant incapable of light-independent chlorophyll biosynthesis: a novel role of chlorophyll *a* for the viability of cyanobacteria
P1-5	Guangyu E. Chen	Shanghai Jiao Tong University, China	Engineering chlorophyll, bacteriochlorophyll and carotenoid biosynthetic pathways in *Escherichia coli*
P1-6	Kentaro Usui	Nagoya University, Japan	A novel secretion system of photosynthetic pigments via extracellular vesicles in the cyanobacterium *Leptolyngbya boryana*
P1-7	Soma Sato	Hokkaido University, Japan	*In vitro* analysis of the chelating and dechelating reactions of Stay Green Related (SGR) Mg dechelatase
P1-8	Fjoralba Zeqiri	Ruhr-Universität Bochum, Germany	Structure and function of enzymes in the synthesis of biline pigments
Session 2: Chloroplast biogenesis and retrograde signaling			
P2-1	Ryo Tachibana	Kyoto University, Japan	Analysis for the molecular mechanism of chloroplast development by brassinosteroid signaling
P2-2	Chiung-Chih Chu	Academia Sinica, Taiwan	High efficiency transit peptides for protein transport into leucoplasts
P2-3	Sho Fujii	Hirosaki University, Japan	Galactolipid biosynthesis involves in GUN1-mediated regulation of photosynthesis-associated genes
P2-4	Chia-Yun Chang	Academia Sinica, Taiwan	Genetic screening to identify cytosolic sorting factors for chloroplasts and mitochondrion proteins import
P2-5	Akiko Yoshihara	Osaka Metropolitan University, Japan	Roles of plastid phospholipid PG and sulfolipid SQDG in etioplast development and de-etiolation of *Arabidopsis thaliana*
Session 3: Chemistry and theory of tetrapyrroles			
P3-1	Saki Kichishima	Ritsumeikan University, Japan	Synthesis and physical properties of chlorophyll–quinone conjugates
Session 4: Bilin-based optogenetics and imaging			
P4-1	Giang Le	University of Toronto, Canada	Toward a biliverdin-binding cyanobacteriochrome-based optogenetic system
P4-2	Takahisa Suzuki	Tokyo Metropolitan University, Japan	Introduction of reversible cysteine ligation ability to the biliverdin-binding cyanobacteriochrome photoreceptor
Session 5: Bili-based antenna proteins			
P5-1	Keita Miyake	The University of Tokyo, Japan	Adaptation mechanism of *Acaryochloris marina* MBIC 11017 to orange light environments
P5-2	Mai Watanabe	Tokyo Metropolitan University, Japan	*Acaryochloris marina* NIES 2412 absorbs and utilizes light of wavelength longer than 730 nm
P5-3	Mutsumi Kubushiro	Tokyo University of Technology, Japan	Acclimation of the rod-shaped phycobilisomes to iron and light color in Cyanobacteria

Session 6: Bilin-based photoreceptors			
P6-1	Megan J. Mackintosh	The Hebrew University of Jerusalem, Israel	Computational investigation of the photoisomerization process in phytochromes
P6-2	Yuya Fujita	Toyohashi University of Technology, Japan	Reconstitution of cyanobacteriochrome RcaE with isotope-labeledbilin chromophore for elucidating its protochromicity
P6-3	Mana Fukazawa	Tokyo Metropolitan University, Japan	Elucidation of orange light absorbing property of the dualchrome1 phytochrome region
P6-4	Shizue Yoshihara	Osaka Metropolitan University, Japan	Activation of PhyC with short-wavelength light is important for growth under low red:far-red light conditions
P6-5	Yasuhiro Jyojima	Saga University, Japan	Cryogenic Raman study of photoconversion from green to red absorbing state of the cyanobacteriochrome RcaE