

## **Japan-France Joint Workshop on the Structure and Function of Photosystem II**

**December 7-8, 2017, Matsuyama, Japan**

**Place: Ehime University, Jyohoku-Campus, Faculty of Science, General Research Building 1, 6F, Large Meeting Room**

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### **Program**

#### ***Thursday, the 7<sup>th</sup> of December***

9:30: Reception with coffee and tea

10:00-10:10: Introduction by Miwa Sugiura, Jian-Ren Shen and Alain Boussac

#### ***10:10-12:10: First session chaired by Miwa Sugiura***

10:10-10:40 (25+5): Miwa Sugiura (Ehime Univ.)

New insights in PSII functions from the study of donor side and acceptor side mutants.

10:40-11:00 (15+5): Yuki Takegawa (Ehime Univ.)

Effects of the ligand modification of the ChlD1 on the Photosystem II photochemistry

11:00-11:20 (15+5): Itsuki Takachi (Ehime Univ.)

The binding of herbicides to the different Photosystem II variants.

11:20-11:40 (15+5): Makoto Nakamura (Ehime Univ.)

Structural modifications of Cytb559 and their effects on its redox properties

11:40-12:10 (25+5): Alain Boussac (CNRS, CEA Saclay, France)

The S<sub>2</sub> to S<sub>3</sub> transition: a key step in the oxygen evolving mechanism + Spectroscopic characterizations of Photosystem II mutants.

12:10-13:00: Lunch

[lunch boxes will be delivered close to the meeting room]

#### ***13:00-15:00: Second session chaired by Rainer Hienerwadel***

13:00-13:30 (25+5): Lidia Zuccarello (CEA, CNRS, Aix-Marseille Univ., France)

Study of the Mn<sub>4</sub>-cluster in the water oxidation process in the very-far infrared domain + study of the different ferredoxins from *T. elongatus* and from other species.

13:30-14:00 (25+5): Tania Tibiletti (Synchrotron Soleil, France)

The low spin to high spin transition in the  $S_2$  state: a very-far infrared study at the Synchrotron Soleil + spectroscopic studies of the V185N mutant affecting the water oxidation process.

14:00-14:30 (25+5): Yuki Kato (Nagoya Univ.)

FTIR spectroelectrochemical study on the redox potentials of the primary quinone  $Q_A$  and the secondary quinone  $Q_B$  in Photosystem II

14:30-15:00 (25+5): Takumi Noguchi (Nagoya Univ.)

Infrared analysis of electron transfer and water oxidation reactions in Photosystem II

15:00-15:30: Coffee break

**15:30-17:00**: *Third session chaired by Alain Bousac*

15:30-16:00 (25+5): Hiroshi Isobe (Okayama Univ.)

Geometric and Electronic Structures of the  $Mn_4CaO_5$  in the Oxygen-Evolving Complex

16:00-16:30 (25+5): Rainer Hienerwadel (CEA, CNRS, Aix-Marseille Univ., France)

Spectro-Electrochemistry of hemoproteins with a His/Cys heme axial ligation.

16:30-17:00 (25+5): Catherine Berthomieu (CEA, CNRS, Aix-Marseille Univ., France)

Better understanding of the structure-properties relationship in engineering metal sites in proteins for the affine and selective binding of lanthanide and actinides.

**17:00-17:45**: General discussion

18:00: departure for dinner (Yamatoya hotel) including a traditional Noh theater presentation

[Due to our limited budget for the meeting a contribution of 2000 yens/person will be asked for the banquet]

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***Friday, the 8<sup>th</sup> of December***

8:30: Reception with coffee and tea

**9:00-12:00**: *session chaired by Jian-Ren Shen*

9:00-9:30 (25+5): Yasufumi Umena (Okayama Unvi.)

Mn-oxidation states in PSII

9:30-9:55 (20+5): Taiki Motomura (Okayama Unvi.)

Structure and properties of soluble proteins, a hemo-protein TII0287 expressed when D1 is PsbA2 and the minor ferredoxin Fd2

9:55-10:20 (20+5): Yoshiki Nakajima (Okayama Unvi.)  
Structure of a PSII SQDG-deletion mutant: functional implications

10:20-10:50 (25+5): Longjiang Yu (Okayama Unvi.)  
Structure of a RC-LH1 super-complex from a purple sulfur bacterium

10:50-11:10 (15+5): Jian-Ren Shen (Okayama Unvi.)  
Structures of PSII with herbicides bound

11:30-13:30: Lunch

**13:30-16:00**: *General discussions*

- Analysis of the structure-function relationship of metalloproteins involved in photosynthesis.
- Mechanism of water oxidation.
- Structure-properties relationship of lanthanide and radionuclide binding sites in proteins for remediation.
- New projects to do in collaboration

**16:00** : *End of the meeting*