MAI WATANABE

JSPS Overseas Restart Research Fellow
Albert-Ludwigs-Universität Freiburg, Schänzlestr. 1, 79104 Freiburg, Germany
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EDUCATION

PhD **The University of Tokyo**, Graduate School of Arts and Sciences — 2008–2012
Title: Analysis of supramolecular organization of photosystems.
Advisor: Prof. Masahiko Ikeuchi

MS **University of Hyogo,** Graduate School of Life Science — 2006–2008
Title: Reconstitution of cyclic electron transport in *Synechocystis* sp. PCC 6803 by a cell-free system.
Advisor: Prof. Kazuhiko Satoh, Associate Prof. Hiroyuki Koike

HONORS, AWARDS AND GRANTS

JSPS Overseas RESTART Research Fellowship 2018–2020

Research Fellowships for Young Scientists by JSPS, 2018– for Postdoctoral Fellow (RPD) (declined it because of another fellowships)

Grant-in-Aid for Scientific Research on Innovative Areas (Japan Society for the Promotion of Science (JSPS) KAKENHI grant No. 17H05716) 2017–2019

16th International Congress on Photosynthesis Poster award 2013

13th congress of THE JAPANESE SOCIETY OF PHOTOSYNTHESIS RESEARCH Poster award 2013

International conference Photosynthesis Research for Sustainability Young talents award 2011

9th congress of THE JAPANESE SOCIETY OF PHOTOSYNTHESIS RESEARCH Poster award 2009

RESEARCH EXPERIENCE

- **Cultivation of cyanobacteria** (*Thermosynechococcus elongatus/Anabaena* sp. PCC 7120/*Synechocystis* sp. PCC 6803/*Synechococcus elongatus* PCC 7942/*Synechococcus* WH 8102/*Cyanothece* sp. PCC 8801/*Acaryochloris marina/*

Gloeobacter violaceus PCC 7421/ *Tolypothrix* sp. PCC 7601)
- **Cultivation of algae** (*Cyanophora paradoxa/ Cyanidioschyzon merolae/Chaetoceros gracilis/Thalassiosira pseudonana/Phaeodactylum tricornutum*)
- **DNA work** (design and construction)
- **RNA work** (preparation and Northern blotting)
- **Photosystem complex isolation and analysis**
- **Protein complex preparation and analysis**
- **spectroscopy**
- **physiology of cyanobacteria**
- **Joliot type spectroscopy** (P700 oxidation/re-reduction)
- **PAM** (P700 oxidation/re-reduction)
- **Oxygen evolving activity measurement**

CONFERENCE PRESENTATIONS (International)

Oral

○**Watanabe M**, Ehira S, Kondo K, Narikawa R, Ohmori M, Ikeuchi M

"The novel antenna-photosystem I supercomplex that drives nitrogen fixation"

Japanese-Finnish Seminar 2012, Naantali, Finland, September 2012.

Poster

○**Watanabe M**, Yoshino H, Matsumura M, Okuda Y, Ikeuchi M
"Enhanced recovery from photosystem I photoinhibition by the assembly factor."
10th European Workshop on the Molecular Biology of Cyanobacteria, Romania, August 20-24, 2017

○**Watanabe M**, Matsumura M, Yoshino H, Okuda Y, Ikeuchi M
"Recovery from photosystem I photoinhibition by the assembly factor."
17th International congress on Photosynthesis., Maastricht, The Netherlands, August 2016.
(and 12 other posters)

RESEARCH JOB

Post-doc, Albert-Ludwigs-Universität Freiburg, Institut für Biologie III, **JSPS Overseas Research Fellowship** 2018–2020
Post-doc, **The University of Tokyo**, Graduate School of Arts and Sciences, **CREST project** 2012–2018

PUBLICATION LIST

Published (peer reviewed)

1. Ikeda Y, Komura M, **Watanabe M**, Minami C, Koike H, Itoh S, Kashino Y, Satoh K "Photosystem I complexes associated with fucoxanthin-chlorophyll-binding proteins from a marine centric diatom *Chaetoceros gracilis*" BBA-Bioenergetics. Elsevier Ltd., 1777, pp351-361, 2008.

2. **Watanabe M**, Iwai M, Narikawa R, Ikeuchi M "Is the Photosystem II complex a monomer or a dimer?" Plant and Cell Physiology. Oxford university press., 50(9), pp1674-1680, 2009. **※Editor's choice**

3. **Watanabe M** "High concentrations of Detergent induce a dimerization of Photosystem II!?" Photosynthesis Research (Japan). The Japanese Society of photosynthesis research, 2, pp 48-51, 2009.

4. **Watanabe M**, Kubota H, Wada H, Narikawa R, Ikeuchi M "Novel supercomplex organization of photosystem I in *Anabaena* and *Cyanophora paradoxa*" Plant and Cell Physiology. Oxford university press., 52(1), pp162-168, 2011.

5. **Watanabe M**, Sato M, Kondo K, Narikawa R, Ikeuchi M "Phycobilisome model with novel skeleton-like structures in a glaucocystophyte *Cyanophora paradoxa*" BBA-Bioenergetics. Elsevier Ltd., 1817, pp1428-1435, 2012.

6. **Watanabe M**, Kubota H, Wada H, Narikawa R, Ikeuchi M "Supercomplex organizations and evolution of Photosystems I and II (*Anabaena* sp. PCC 7120, *Cyanophora paradoxa* and *Cyanidioschyzon merolae*)" Photosynthesis Research for Food, Fuel and the Future Advanced Topics in Science and Technology in China pp13-16, 2013.

7. **Watanabe M** and Ikeuchi M "Phycobilisome: architecture of a light-harvesting supercomplex" Photosynthesis Research. Springer. 116, pp265-276, 2013. **Review**

8. **Watanabe M**, Semchonokc A. T, Webber-Birungic T. M, Ehira S, Kondo K, Narikawa R, Ohmori M, Boekema J. E, Ikeuchi M "Attachment of phycobilisomes in an antenna-photosystem I supercomplex of cyanobacteria" Proc. Natl. Acad. Sci. USA, 111 pp2512-2517, 2014.

9. Fujisawa T, Narikawa R, Maeda S, Watanabe S, Kanesaki Y, Kobayashi K, Nomata J, Hanaoka M, **Watanabe M**, Ehira S, Suzuki E, Awai K, Nakamura Y "CyanoBase: a large-scale update on its 20th anniversary" Nucleic acids research, 45(D1), ppD551-D554, 2016, Oxford University Press

10. Kohzuma K, Sato Y, Ito H, Okuzaki A, **Watanabe M**, Kobayashi H, Nakano M, Yamatani H, Masuda Y, Nagashima Y, Fukuoka H, Yamada T, Kanazawa A, Kitamura K, Tabei Y, Ikeuchi M, Sakamoto W, Tanaka A, Kusaba M "The non-Mendelian green cotyledon gene in soybean encodes a small subunit of photosystem II" Plant physiology, 173(4), pp2138-2147, 2017, Am Soc Plant Biol

11. Kumagai Y, Yoshizawa S, Nakajima Y, **Watanabe M**, Fukunaga T, Ogura Y, Hayashi T, Oshima K, Hattori M, Ikeuchi M, Kogure K, DeLong F. E, Iwasaki W "Solar-panel and parasol strategies shape the proteorhodopsin distribution pattern in marine Flavobacteriia" The ISME journal, 12(5), pp1329-1343, 2018, Nature Publishing Group

12. Hirose Y, Chihong S, **Watanabe M**, Yonekawa C, Murata K, Ikeuchi M, Eki T "Diverse chromatic acclimation regulating phycoerythrocyanin and rod-shaped phycobilisome in cyanobacteria" Molecular plant, 12(5), pp715-725, 2019, Cell Press