

教員選考調書

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	(賞罰)
なし	

原著論文（査読付き）

1. Y. Ueno*, S. Akimoto, Long-term light adaptation of light-harvesting and energy-transfer processes in the glaucophyte *Cyanophora paradoxa* under different light conditions, *Photosynth. Res.*, **159**, 165–175 (2024).
2. R. Nagao*, K. Kato, T. Hamaguchi, Y. Ueno, N. Tsuboshita, S. Shimizu, M. Furutani, S. Ehira, Y. Nakajima, K. Kawakami, T. Suzuki, N. Dohmae, S. Akimoto*, K. Yonekura*, J.-R. Shen*, Structure of a monomeric photosystem I core associated with iron-stress-induced-A proteins from *Anabaena* sp. PCC 7120, *Nat. Commun.*, **14**, 920 (2023).
3. R. Nagao*, Y. Ueno, M. Furutani, K. Kato, J.-R. Shen, S. Akimoto*, Biochemical and spectroscopic characterization of PSI-LHCI from the red alga *Cyanidium caldarium*, *Photosynth. Res.*, **156**, 315–323 (2023).
4. H. Sepeta, M. Yokono, A. Takabayashi, Y. Ueno, A.M. Corderio, T. Hara, A. Tanaka, S. Akimoto, M.M. Oliveira*, R. Tanaka*, Reversible down-regulation of photosystems I and II leads to fast photosynthesis recovery after long-term drought in *Jatropha curcas*, *J. Exp. Bot.*, **74**, 336–351 (2023).
5. K. Kagatani, R. Nagao, J.-R. Shen, Y. Yamano, S. Takaichi, S. Akimoto*, Excitation relaxation dynamics of carotenoids constituting the diadinoxanthin cycle, *Photosynth. Res.*, **154**, 13–19 (2022).
6. K. Kato, T. Hamaguchi, R. Nagao*, K. Kawakami, Y. Ueno, T. Suzuki, H. Uchida, A. Murakami, Y. Nakajima, M. Yokono, S. Akimoto, N. Dohmae, K. Yonekura*, J.-R. Shen*, Structural basis for the absence of low-energy chlorophylls in a photosystem I trimer from *Gloeobacter violaceus*, *eLife*, **11**, e73990 (2022).
7. R. Nagao*, K. Kato, M. Kumazawa, K. Ifuku, M. Yokono, T. Suzuki, N. Dohmae, F. Akita, S. Akimoto*, N. Miyazaki*, J.-R. Shen*, Structural basis for different types of hetero-tetrameric light-harvesting complexes in a diatom PSII-FCPII supercomplex, *Nat. Commun.*, **13**, 1764 (2022).
8. K. Kato, R. Nagao*, Y. Ueno, M. Yokono, T. Suzuki, T.-Y. Jiang, N. Dohmae, F. Akita, S. Akimoto, N. Miyazaki*, J.-R. Shen*, Structure of a tetrameric photosystem I from a glaucophyte alga *Cyanophora paradoxa*, *Nat. Commun.*, **13**, 1679 (2022).
9. R. Nagao*, M. Yokono, Y. Ueno, Y. Nakajima, T. Suzuki, K. Kato, N. Tsuboshita, N. Dohmae, J.-R. Shen, S. Ehira*, S. Akimoto*, Excitation-energy transfer in heterocysts isolated from the cyanobacterium *Anabaena* sp. PCC 7120 as studied by time-resolved fluorescence spectroscopy, *Biochim. Biophys. Acta*, **1863**, 148509 (2022).
10. R. Nagao*, M. Yokono, K. Kato, Y. Ueno, J.-R. Shen, S. Akimoto*, High-light modification of excitation-energy-relaxation processes in the green flagellate *Euglena gracilis*, *Photosynth. Res.*, **149**, 303–311 (2021).
11. K. Yoshikawa, K. Ogawa, Y. Toya, S. Akimoto, F. Matsuda, H. Shimizu*, Mutations in hik26 and slr1916 lead to high-light stress tolerance in *Synechocystis* sp. PCC6803, *Commun. Biol.*, **4**, 343 (2021).
12. R. Nagao*, M. Yokono, Y. Ueno, K. Kato, N. Tsuboshita, J.-R. Shen, S. Akimoto*, Basic pH-induced modification of excitation-energy dynamics in fucoxanthin chlorophyll a/c-binding proteins isolated from a pinguiphyte, *Glossomastix chrysoplasta*, *Biochim. Biophys. Acta*, **1862**, 148306 (2021).
13. R. Nagao, K. Kato, K. Ifuku, T. Suzuki, M. Kumazawa, I. Uchiyama, Y. Kashino, N. Dohmae, S. Akimoto, J.-R. Shen, N. Miyazaki*, F. Akita*, Structural basis for assembly and function of a diatom photosystem I-light-harvesting supercomplex, *Nat. Commun.*, **11**, 2481 (2020).
14. F. Akita*, R. Nagao, K. Kato, Y. Nakajima, M. Yokono, Y. Ueno, T. Suzuki, N. Dohmae, J.-R. Shen*, S. Akimoto*, N. Miyazaki*, Structure of a cyanobacterial photosystem I surrounded by octadecameric IsiA antenna proteins, *Commun. Biol.*, **3**, 232 (2020).
15. Y. Ueno*, G. Shimakawa, S. Aikawa, C. Miyake, S. Akimoto*, Photoprotection mechanisms under different

CO₂ regimes during photosynthesis in a green alga *Chlorella variabilis*, *Photosynth. Res.*, **144**, 397–407 (2020).

16. R. Nagao*, M. Yokono, Y. Ueno, T.-Y. Jiang, J.-R. Shen, **S. Akimoto***, pH-induced regulation of excitation energy transfer in cyanobacterial photosystem I tetramer, *J. Phys. Chem. B*, **124**, 1949–1954 (2020).
17. K. Oka, Y. Ueno, M. Yokono, J.-R. Shen, R. Nagao*, **S. Akimoto***, Adaptation of light-harvesting and energy-transfer processes of a diatom *Phaeodactylum tricornutum* to different light qualities, *Photosynth. Res.*, **146**, 227–234 (2020).
18. M. Tanabe, Y. Ueno, M. Yokono, J.-R. Shen, R. Nagao*, **S. Akimoto***, Changes in excitation relaxation of diatoms in response to fluctuating light, probed by fluorescence spectroscopies, *Photosynth. Res.*, **146**, 143–150 (2020).
19. **S. Akimoto***, Y. Ueno, M. Yokono, J.-R. Shen, R. Nagao*, Adaptation of light-harvesting and energy-transfer processes of a diatom *Chaetoceros gracilis* to different light qualities, *Photosynth. Res.*, **146**, 87–93 (2020).
20. K. Kato, T. Shinoda, R. Nagao, **S. Akimoto**, T. Suzuki, N. Dohmae, M. Chen, S.I. Allakhverdiev, J.-R. Shen*, F. Akita*, N. Miyazaki*, T. Tomo*, Structural basis for the adaptation and function of chlorophyll *f* in photosystem I, *Nat. Commun.*, **11**, 238 (2020).
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22. R. Nagao*, Y. Ueno, M. Yokono, J.-R. Shen, **S. Akimoto***, Effects of excess light energy on excitation-energy dynamics in a pennate diatom *Phaeodactylum tricornutum*, *Photosynth. Res.*, **141**, 355–365 (2019).
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28. R. Nagao*, K. Kagatani, Y. Ueno, J.-R. Shen, **S. Akimoto***, Ultrafast excitation-energy dynamics in diatom photosystem I–antenna complex: a femtosecond fluorescence upconversion study, *J. Phys. Chem. B*, **123**, 2673–2678 (2019).
29. H. Kubota-Kawai, R.N. Burton-Smith, R. Tokutsu, C. Song, **S. Akimoto**, M. Yokono, Y. Ueno, E. Kim, A. Watanabe, K. Murata, J. Minagawa*, Supermolecular organization of PSI-LHCI in *Chlamydomonas reinhardtii*: Ten LHCA antenna proteins are associated with PSI core, *J. Biol. Chem.*, **294**, 4304–4314 (2019).
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32. R. Nagao*, M. Yokono, Y. Ueno, J.-R. Shen, **S. Akimoto***, Low-energy chlorophylls in fucoxanthin chlorophyll *a/c*-binding protein conduct excitation energy transfer to photosystem I in diatoms, *J. Phys. Chem. B*, **123**, 66–70 (2019).
33. R. Nagao*, Y. Ueno, M. Yokono, J.-R. Shen, **S. Akimoto***, Alteration of pigment composition and their interactions in response to different light conditions in the diatom *Chaetoceros gracilis* by time-resolved fluorescence spectroscopy, *Biochim. Biophys. Acta*, **1859**, 524–530 (2018).
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39. Y. Ueno, S. Aikawa, K. Niwa, T. Abe, A. Murakami, A. Kondo, **S. Akimoto***, Variety in excitation energy transfer processes from phycobilisomes to photosystems I and II, *Photosynth. Res.*, **133**, 235–243 (2017).
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41. K. Tanaka, S. Iida, S. Takaichi, M. Mimuro, A. Murakami, **S. Akimoto***, Excitation relaxation dynamics and energy transfer in pigment-protein complexes of a dinoflagellate revealed by ultrafast fluorescence spectroscopy, *Photosynth. Res.*, **130**, 183–191 (2016).
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46. K. Niki, S. Aikawa, M. Yokono, A. Kondo, **S. Akimoto***, Differences in energy transfer of a cyanobacterium,

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47. A. Onishi, S. Aikawa, A. Kondo, **S. Akimoto***, Energy transfer in *Anabaena variabilis* filaments under nitrogen depletion, studied by time-resolved fluorescence, *Photosynth. Res.*, **125**, 191–199 (2015).
48. **S. Akimoto***, T. Shinoda, M. Chen, S.I. Allakhverdiev, T. Tomo, Energy transfer in the chlorophyll-*f*-containing cyanobacterium, *Halomicronema hongdechloris*, analyzed by time-resolved fluorescence spectroscopies, *Photosynth. Res.*, **125**, 115–122 (2015).
49. M. Yokono*, A. Takabayashi, **S. Akimoto***, A. Tanaka, A megacomplex composed of both photosystem reaction centers in higher plants, *Nat. Commun.*, **6**, 6675 (2015).
50. M. Iwai*, M. Yokono, M. Kono, K. Noguchi, **S. Akimoto**, A. Nakano, Light-harvesting complex Lhc9 confers a green alga-type photosystem I supercomplex to the moss *Physcomitrella patens*, *Nat. Plants*, **1**, 14008 (2015).
51. R. Nagao*, M. Yokono, T. Tomo, **S. Akimoto**, Control mechanism of excitation energy transfer in a complex consisting of photosystem II and fucoxanthin chlorophyll *a/c*-binding protein, *J. Phys. Chem. Lett.*, **5**, 2983–2987 (2014).
52. **S. Akimoto***, A. Teshigahara, M. Yokono, M. Mimuro, R. Nagao, T. Tomo, Excitation relaxation dynamics and energy transfer in fucoxanthin-chlorophyll *a/c*-protein complexes, probed by time-resolved fluorescence, *Biochim. Biophys. Acta*, **1837**, 1514–1521 (2014).
53. T. Tomo*, T. Shinoda, M. Chen, S.I. Allakhverdiev, **S. Akimoto**, Energy transfer processes in chlorophyll-*f*-containing cyanobacteria using time-resolved fluorescence spectroscopy on intact cells, *Biochim. Biophys. Acta*, **1837**, 1484–1489 (2014).
54. Y. Iima, D. Kuzuhara, Z. Xue, **S. Akimoto**, H. Yamada, K. Tominaga*, Time-resolved fluorescence spectroscopy study of excited state dynamics of alkyl- and benzo-substituted triphyrin(2.1.1), *Phys. Chem. Chem. Phys.*, **16**, 13129–13135 (2014).
55. M. Arba, S. Aikawa, K. Niki, M. Yokono, A. Kondo, **S. Akimoto***, Differences in excitation energy transfer of *Arthrospira platensis* cells grown in seawater medium and freshwater medium, probed by time-resolved fluorescence spectroscopy, *Chem. Phys. Lett.*, **588**, 231–236 (2013).
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57. F. Hamada, M. Yokono, E. Hirose, A. Murakami, **S. Akimoto***, Excitation energy relaxation in a symbiotic cyanobacterium, *Prochloron didemni*, occurring in coral-reef ascidians, and in a free-living cyanobacterium, *Prochlorothrix hollandica*, *Biochim. Biophys. Acta*, **1817**, 1992–1997 (2012).
58. **S. Akimoto***, M. Yokono, F. Hamada, A. Teshigahara, S. Aikawa, A. Kondo, Adaptation of light-harvesting systems of *Arthrospira platensis* to light conditions, probed by time-resolved fluorescence spectroscopy, *Biochim. Biophys. Acta*, **1817**, 1483–1489 (2012).
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61. M. Mimuro*, A. Murakami, T. Tomo, T. Tsuchiya, K. Watabe, M. Yokono, **S. Akimoto***, Molecular environments of divinyl chlorophylls in *Prochlorococcus* and *Synechocystis*: differences in fluorescence

- properties with chlorophyll replacement, *Biochim. Biophys. Acta*, **1807**, 471–481 (2011).
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 64. **S. Akimoto***, M. Yokono, M. Higuchi, T. Tomo, S. Takaichi, A. Murakami, M. Mimuro, Solvent effects on excitation relaxation dynamics of a keto-carotenoid, siphonaxanthin, *Photochem. Photobiol. Sci.*, **7**, 1206–1209 (2008).
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(他、87件)

総説・解説

1. M. Yokono, Y. Ueno, **S. Akimoto***, Modification of energy distribution between photosystems I and II by spillover revealed by time-resolved fluorescence spectroscopy, in J.-R. Shen, K. Satoh, S.I. Allakhverdiev (eds.), "Photosynthesis: molecular approaches to solar energy conversion", Springer, Cham, pp. 277–302 (2021).
2. M. Yokono, **S. Akimoto***, Energy transfer and distribution in photosystem super/megacomplex of plants, *Curr. Opin. Biotechnol.*, **54**, 50–56 (2018).
3. **S. Akimoto***, M. Yokono, How light-harvesting and energy-transfer processes are modified under different light conditions: studies by time-resolved fluorescence spectroscopy, in H.J.M. Hou, M.M. Najafpour, G.F. Moore, S.I. Allakhverdiev (Eds.), Photosynthesis: Structures, mechanisms, and applications, Springer, Cham, pp. 169–184 (2017).
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5. **S. Akimoto***, M. Mimuro, Application of time-resolved polarization fluorescence spectroscopy in the femtosecond range to photosynthetic systems. (Review article invited in part of the Symposium-in-Print: Photobiology in Asia), *Photochem. Photobiol.*, **83**, 163–170 (2007).

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