

BIBLIOGRAPHY

Bibliography of reviews and methods of photosynthesis – 90

Z. ŠESTÁK and J. ČATSKÝ

*Institute of Experimental Botany, Academy of Sciences of the Czech Republic,
Na Karlovce 1a, CZ-160 00 Praha 6, Czech Republic***REVIEW PAPERS**

- Åhrling, K.A., Pace, R.J., Evans, M.C.W.: The catalytic manganese cluster: Implications from spectroscopy. – In: Wydrzynski, T.J., Satoh, K. (ed.): *Photosystem II. The Light-Driven Water:Plastoquinone Oxidoreductase*. Pp. 285-305. Springer, Dordrecht 2005. [101 ref.]
- Ashmore, M.R.: Assessing the future global impacts of ozone on vegetation. – *Plant Cell Environ.* **28**: 949-964, 2005. [163 ref.]
- Badger, M.R., Price, G.D., Long, B.M., Woodger, F.J.: The environmental plasticity and ecological genomics of the cyanobacterial CO₂ compensating mechanism. – *J. exp. Bot.* **57**: 249-265, 2006. [Ps; 62 ref.]
- Baier, M., Dietz, K.-J.: Chloroplasts as source and target of cellular redox regulation: a discussion on chloroplast redox signals in the context of plant physiology. – *J. exp. Bot.* **56**: 1449-1462, 2005. [138 ref.]
- Barber, J., Iwata, S.: Refined X-ray structure of Photosystem II and its implications. – In: Wydrzynski, T.J., Satoh, K. (ed.): *Photosystem II. The Light-Driven Water:Plastoquinone Oxidoreductase*. Pp. 469-489. Springer, Dordrecht 2005. [127 ref.]
- Barter, L.M.C., Klug, D.R., Van Grondelle, R.: Energy trapping and equilibration: A balance of regulation and efficiency. – In: Wydrzynski, T.J., Satoh, K. (ed.): *Photosystem II. The Light-Driven Water:Plastoquinone Oxidoreductase*. Pp. 491-514. Springer, Dordrecht 2005. [180 ref.]
- Bechtold, U., Karpinski, S., Mullineaux, P.M.: The influence of the light environment and photosynthesis on oxidative signalling responses in plant-biotrophic pathogen interactions. – *Plant Cell Environ.* **28**: 1046-1055, 2005. [109 ref.]
- Beck, C.F.: Signaling pathways from the chloroplast to the nucleus. – *Planta* **222**: 743-756, 2005. [109 ref.]
- Bédard, J., Jarvis, P.: Recognition and envelope translocation of chloroplast preproteins. – *J. exp. Bot.* **56**: 2287-2320, 2005. [197 ref.]
- Bertrand, M., Poirier, I.: Photosynthetic organisms and excess of metals. – *Photosynthetica* **43**: 345-353, 2005. [120 ref.]
- Bittl, R., Kawamori, A.: Configuration of electron transfer components studied by EPR spectroscopy. – In: Wydrzynski, T.J., Satoh, K. (ed.): *Photosystem II. The Light-Driven Water:Plastoquinone Oxidoreductase*. Pp. 389-402. Springer, Dordrecht 2005. [77 ref.]
- Bricker, T.M., Burnap, R.L.: The extrinsic proteins of Photosystem II. – In: Wydrzynski, T.J., Satoh, K. (ed.): *Photosystem II. The Light-Driven Water:Plastoquinone Oxidoreductase*. Pp. 95-120. Springer, Dordrecht 2005. [193 ref.]
- Brudvig, G.W., Wikström, M.: Mechanistic comparisons between Photosystem II and cytochrome *c* oxidase. – In: Wydrzynski, T.J., Satoh, K. (ed.): *Photosystem II. The Light-Driven Water:Plastoquinone Oxidoreductase*. Pp. 697-713. Springer, Dordrecht 2005. [103 ref.]
- Buchanan, B.B., Balmer, Y.: Redox regulation: A broadening horizon. – *Annu. Rev. Plant Biol.* **56**: 187-220, 2005. [Ps, thioredoxin; 214 ref.]
- Buchanan, B.B., Luan, S.: Redox regulation in the chloroplast thylakoid lumen: a new frontier in photosynthesis research. – *J. exp. Bot.* **56**: 1439-1447, 2005. [92 ref.]
- Budzikiewicz, H., Grisby, R.D.: Mass spectrometry and isotopes: A century of research and discussion. – *Mass Spectrometry Rev.* **25**: 146-157, 2006. [Ps, C isotopes; 109 ref.]
- Chelle, M.: Phylloclimate or the climate perceived by individual plant organs: What is it? How to model it? What for? – *New Phytol.* **166**: 781-790, 2005. [63 ref.]
- Chen, M., Bibby, T.S.: Photosynthetic apparatus of antenna-reaction centres supercomplexes in oxyphotobacteria: insight through significance of Pcb/IsiA proteins. – *Photosynth. Res.* **86**: 165-173, 2005. [45 ref.]
- Cho, M., Brixner, T., Stiopkin, I., Vaswani, H., Fleming, G.R.: Two dimensional electronic spectroscopy of molecular complexes. – *J. chin. chem. Soc.* **53**: 15-24, 2006. [Ps, Chl; 33 ref.]
- Chow, W.S., Aro, E.-M.: Photoinactivation and mechanisms of recovery. – In: Wydrzynski, T.J., Satoh, K. (ed.): *Photosystem II. The Light-Driven Water:Plastoquinone Oxidoreductase*. Pp. 627-648. Springer, Dordrecht 2005.

Abbreviations in the notes: BChl – bacteriochlorophyll; Bil – phycobilins; Car – carotenoids; CC – column chromatography; Chl – chlorophyll; Cyt – cytochrome; GC – gas chromatography; HPLC – high performance liquid chromatography; IRGA – infra-red gas analyser; LAI – leaf area index; PC – paper chromatography; PEPC – phosphoenolpyruvate carboxylase; PAR – photosynthetically active radiation; Ps – photosynthesis; RuBPCO – ribulose-1,5-bisphosphate carboxylase/oxygenase; TLC – thin-layer chromatography; Tr – transpiration; WUE – water use efficiency; ab – abstract; E – English; F – French; G – German; R – Russian; ref. – references.

- [169 ref.]
- Cove, D., Bezanilla, M., Harries, P., Quatrano, R.: Mosses as model systems for the study of metabolism and development. – *Annu. Rev. Plant Biol.* **57**: 497-520, 2006. [Ps; 126 ref.]
- Debus, R.J.: The catalytic manganese cluster: Protein ligation. – In: Wydrzynski, T.J., Satoh, K. (ed.): *Photosystem II. The Light-Driven Water:Plastoquinone Oxidoreductase*. Pp. 261-284. Springer, Dordrecht 2005. [123 ref.]
- Dembitsky, V.M., Řezanka, T.: Metabolites produced by nitrogen-fixing *Nostoc* species. – *Folia microbiol.* **50**: 363-391, 2005. [Car, Bil; 151 ref.]
- Diner, B.A., Britt, R.D.: The redox-active tyrosines Y_Z and Y_D. – In: Wydrzynski, T.J., Satoh, K. (ed.): *Photosystem II. The Light-Driven Water:Plastoquinone Oxidoreductase*. Pp. 207-233. Springer, Dordrecht 2005. [175 ref.]
- Dismukes, G.C., Ananyev, G.M., Watt, R.: Photo-assembly of the catalytic manganese cluster. – In: Wydrzynski, T.J., Satoh, K. (ed.): *Photosystem II. The Light-Driven Water:Plastoquinone Oxidoreductase*. Pp. 609-626. Springer, Dordrecht 2005. [104 ref.]
- Dismukes, G.C., Blankenship, R.E.: The origin and evolution of photosynthetic oxygen production. – In: Wydrzynski, T.J., Satoh, K. (ed.): *Photosystem II. The Light-Driven Water:Plastoquinone Oxidoreductase*. Pp. 683-695. Springer, Dordrecht 2005. [69 ref.]
- Dufossé, L., Galaup, P., Yaron, A., Arad, S.M., Blanc, P., Murthy, K.N.C., Ravishankar, G.A.: Microorganisms and microalgae as sources of pigments for food use: a scientific oddity or an industrial reality? – *Trends Food Sci. Technol.* **16**: 389-406, 2005. [Bil, Car; 95 ref.]
- Eaton-Rye, J.J., Putnam-Evans, C.: The CP47 and CP43 core antenna components. – In: Wydrzynski, T.J., Satoh, K. (ed.): *Photosystem II. The Light-Driven Water:Plastoquinone Oxidoreductase*. Pp. 45-70. Springer, Dordrecht 2005. [162 ref.]
- El-Sharkawy, M.A.: How can calibrated research-base models be improved for use as a tool in identifying genes controlling crop tolerance to environmental stresses in the era of genomics – from an experimentalist's perspective. – *Photosynthetica* **43**: 161-176, 2005. [185 ref.]
- Evans, T.C., Jr., Xu, M.-Q., Pradhan, S.: Protein splicing elements and plants: from transgene containment to protein purification. – *Annu. Rev. Plant Biol.* **56**: 375-392, 2005. [Chloroplast; 25 ref.]
- Faller, P., Fufezan, C., Rutherford, A.W.: Side-path electron donors: Cytochrome *b*₅₅₉, chlorophyll Z and β -carotene. – In: Wydrzynski, T.J., Satoh, K. (ed.): *Photosystem II. The Light-Driven Water:Plastoquinone Oxidoreductase*. Pp. 347-365. Springer, Dordrecht 2005. [89 ref.]
- Fey, V., Wagner, R., Bräutigam, K., Pfannschmidt, T.: Photosynthetic redox control of nuclear gene expression. – *J. exp. Bot.* **56**: 1491-1498, 2005. [67 ref.]
- Fiscus, E.L., Booker, F.L., Burkey, K.O.: Crop responses to ozone: uptake, modes of action, carbon assimilation and partitioning. – *Plant Cell Environ.* **28**: 997-1011, 2005. [135 ref.]
- Gamalei, Yu.V.: Rol' plastid i transportnoi sistemy assimilyatov v regulatsii razvitiya vysshikh rastenii. [Role of plastids and assimilate transport system in regulating growth of higher plants.] – *Ontogenez* **36**: 1-18, 2005. [In R; 105 ref.]
- Geigenberger, P., Kolbe, A., Tiessen, A.: Redox regulation of carbon storage and partitioning in response to light and sugars. – *J. exp. Bot.* **56**: 1469-1479, 2005. [75 ref.]
- Gelhay, E., Rouhier, N., Navrot, N., Jacquot, J.P.: The plant thioredoxin system. – *Cell. mol. Life Sci.* **62**: 24-35, 2005. [96 ref.]
- Giardi, M.T., Pace, E.: Photosynthetic proteins for technological applications. – *Trends Biotechnol.* **23**: 257-263, 2005. [Biosensors; 40 ref.]
- Gibney, B.R., Tommos, C.: *De novo* protein design in respiration and photosynthesis. – In: Wydrzynski, T.J., Satoh, K. (ed.): *Photosystem II. The Light-Driven Water:Plastoquinone Oxidoreductase*. Pp. 729-751. Springer, Dordrecht 2005. [44 ref.]
- Giordano, M., Beardall, J., Raven, J.A.: CO₂ concentrating mechanisms in algae: Mechanisms, environmental modulation, and evolution. – *Annu. Rev. Plant Biol.* **56**: 99-131, 2005. [213 ref.]
- Green, B.R., Gantt, E.: Distal and extrinsic Photosystem II antennas. – In: Wydrzynski, T.J., Satoh, K. (ed.): *Photosystem II. The Light-Driven Water:Plastoquinone Oxidoreductase*. Pp. 23-44. Springer, Dordrecht 2005. [167 ref.]
- Hankamer, B., Barber, J., Nield, J.: Structural analysis of the Photosystem II core/antenna holocomplex by electron microscopy. – In: Wydrzynski, T.J., Satoh, K. (ed.): *Photosystem II. The Light-Driven Water:Plastoquinone Oxidoreductase*. Pp. 403-424. Springer, Dordrecht 2005. [125 ref.]
- Hikosaka, K., Ishikawa, K., Borjigidai, A., Muller, O., Onoda, Y.: Temperature acclimation of photosynthesis: mechanisms involved in the changes in temperature dependence of photosynthetic rate. – *J. exp. Bot.* **57**: 291-302, 2006. [89 ref.]
- Hillier, W., Messinger, J.: Mechanism of photosynthetic oxygen production. – In: Wydrzynski, T.J., Satoh, K. (ed.): *Photosystem II. The Light-Driven Water:Plastoquinone Oxidoreductase*. Pp. 567-608. Springer, Dordrecht 2005. [270 ref.]
- Hisabori, T., Hara, S., Fujii, T., Yamazaki, D., Hosoya-Matsuda, N., Motohashi, K.: Thioredoxin affinity chromatography: a useful method for further understanding the thioredoxin network. – *J. exp. Bot.* **56**: 1463-1468, 2005. [46 ref.]
- Hörtensteiner, S.: Chlorophyll degradation during senescence. – *Annu. Rev. Plant Biol.* **57**: 55-77, 2006. [135 ref.]
- Howe, C.J., Schlarb-Ridley, B.G., Wastl, J., Purton, S., Bendall, D.S.: The novel cytochrome *c*₆ of chloroplasts: a case of evolutionary *bricolage*? – *J. exp. Bot.* **57**: 13-22, 2006. [66 ref.]
- Ishida, K.: Protein targeting into plastids: a key to understanding the symbiogenetic acquisitions of plastids. – *J. Plant Res.* **118**: 237-245, 2005. [91 ref.]
- Iverson, T.M.: Evolution and unique bioenergetic mechanisms in oxygenic photosynthesis. – *Curr. Opin. chem. Biol.* **10**: 91-100, 2006. [60 ref.]
- Kálmán, L., Williams, J.C., Allen, J.P.: Mimicking the properties of Photosystem II in bacterial reaction centers. –

- In: Wydrzynski, T.J., Satoh, K. (ed.): Photosystem II. The Light-Driven Water:Plastoquinone Oxidoreductase. Pp. 715-727. Springer, Dordrecht 2005. [64 ref.]
- Karnosky, D.F., Pregitzer, K.S., Zak, D.R., Kubiske, M.E., Hendrey, G.R., Weinstein, D., Nosal, M., Percy, K.E.: Scaling ozone responses of forest trees to the ecosystem level in a changing climate. – *Plant Cell Environ.* **28**: 965-981, 2005. [Canopy access walkways, Ps; 90 ref.]
- Kehoe, D.M., Gutu, A.: Responding to color: The regulation of complementary chromatic adaptation. – *Annu. Rev. Plant Biol.* **57**: 127-150, 2006. [Ps; 113 ref.]
- Kessler, D., Papenbrock, J.: Iron-sulfur biosynthesis in photosynthetic organisms. – *Photosynth. Res.* **86**: 391-407, 2005. [82 ref.]
- Kutschera, U., Niklas, K.J.: The modern theory of biological evolution: an expanded synthesis. – *Naturwissenschaften* **91**: 255-276, 2004. [168 ref.]
- Kutschera, U., Niklas, K.J.: Endosymbiosis, cell evolution, and speciation. – *Theory Biosci.* **124**: 1-24, 2005. [Chloroplast; 104 ref.]
- Květoň, J., Dürchan, M., Roháček, K., Šantrůček, J., Vácha, F., Šesták, Z.: Pavel Šiffel (1954-2003) or Life full of chlorophyll. – *Photosynthetica* **43**: 323-328, 2005. [44 ref.]
- Larkum, A.W.D., Kühl, M.: Chlorophyll *d*: the puzzle resolved. – *Trends Plant Sci.* **10**: 355-357, 2005. [14 ref.]
- Ledford, H.K., Niyogi, K.K.: Singlet oxygen and photo-oxidative stress management in plants and algae. – *Plant Cell Environ.* **28**: 1037-1045, 2005. [98 ref.]
- Lu, X.-M., Yin, W.B., Hu, Z.-M.: Chloroplast transformation. – In: Loyola-Vargas, V.M., Vázquez-Flota, F. (ed.): *Plant Cell Culture Protocols*. Pp. 285-303. Humana Press, Totowa – New Jersey 2006. [61 ref.]
- Magnuson, A., Styring, S., Hammarström, L.: Understanding Photosystem II function by artificial photosynthesis. – In: Wydrzynski, T.J., Satoh, K. (ed.): *Photosystem II. The Light-Driven Water:Plastoquinone Oxidoreductase*. Pp. 753-775. Springer, Dordrecht 2005. [97 ref.]
- Manter, D.K., Kerrigan, J.: A/Ci curve analysis across a range of woody plant species: influence of regression analysis parameters and mesophyll conductance. – *J. exp. Bot.* **55**: 2581-2588, 2004. [24 ref.]
- Maple, J., Möller, S.G.: An emerging picture of plastid division in higher plants. – *Planta* **223**: 1-4, 2005. [33 ref.]
- Marmaroti, P., Galanopoulou, D.: Pupils' understanding of photosynthesis: A questionnaire for the simultaneous assessment of all aspects. – *Int. J. Sci. Educ.* **28**: 383-403, 2006. [33 ref.]
- Matyssek, R., Le Thiec, D., Löw, M., Dizengremel, P., Nunn, A.J., Häberle, K.-H.: Interactions between drought and O₃ stress in forest trees. – *Plant Biol.* **8**: 11-17, 2006. [74 ref.]
- McEvoy, J.P., Gascon, J.A., Batista, V.S., Brudvig, G.W.: The mechanism of photosynthetic water splitting. – *Photochem. photobiol. Sci.* **4**: 940-949, 2005. [98 ref.]
- Melis, A., Chen, H.-C.: Chloroplast sulfate transport in green algae – genes, proteins and effects. – *Photosynth. Res.* **86**: 299-307, 2005. [68 ref.]
- Melkozernov, A.N., Barber, J., Blankenship, R.E.: Light harvesting in photosystem I supercomplexes. – *Biochemistry* **45**: 331-345, 2006. [150 ref.]
- Meyer, A.J., Hell, R.: Glutathione homeostasis and redox-regulation by sulfhydryl groups. – *Photosynth. Res.* **86**: 435-457, 2005. [Thioredoxin; 193 ref.]
- Meyer, Y., Reichheld, J.P., Vignols, F.: Thioredoxins in *Arabidopsis* and other plants. – *Photosynth. Res.* **86**: 419-433, 2005. [83 ref.]
- Miyagishima, S.-Y.: Origin and evolution of the chloroplast division machinery. – *J. Plant Res.* **118**: 295-306, 2005. [117 ref.]
- Mommer, L., Pons, T.L., Visser, E.J.W.: Photosynthetic consequences of phenotypic plasticity in response to submergence: *Rumex palustris* as a case study. – *J. exp. Bot.* **57**: 283-290, 2006. [65 ref.]
- Mooij, W.M., Hülsmann, S., Domis, L.N., de Nolet, B.A., Bodelier, P.L.E., Boers, P.C.M., Pires, L.M.D., Gons, H.J., Ibelings, B.W., Noordhuis, R., Portielje, R., Wolfstein, K., Lammens, E.H.R.R.: The impact of climate change on lakes in the Netherlands: a review. – *Aquat. Ecol.* **39**: 381-400, 2005. [164 ref.]
- Mullineaux, P.M., Rausch, T.: Glutathione, photosynthesis and the redox regulation of stress-responsive gene expression. – *Photosynth. Res.* **86**: 459-474, 2005. [122 ref.]
- Nambara, E., Marion-Poll, A.: Abscissic acid biosynthesis and catabolism. – *Annu. Rev. Plant Biol.* **56**: 165-185, 2005. [Car; 131 ref.]
- Nelson, N., Ben-Shem, A.: The complex architecture of oxygenic photosynthesis. – *Nature Rev. mol. Cell Biol.* **5**: 971-982, 2004. [107 ref.]
- Nelson, N., Ben-Shem, A.: The structure of photosystem I and evolution of photosynthesis. – *Bioassays* **27**: 914-922, 2005. [65 ref.]
- Nelson, N., Yocum, C.F.: Structure and function of photosystems I and II. – *Annu. Rev. Plant Biol.* **57**: 521-565, 2006. [324 ref.]
- Nishiyama, Y., Allakhverdiev, S.I., Murata, N.: Inhibition of the repair of Photosystem II by oxidative stress in cyanobacteria. – *Photosynth. Res.* **84**: 1-7, 2005. [45 ref.]
- Nixon, P.J., Sarcina, M., Diner, B.A.: The D1 and D2 core proteins. – In: Wydrzynski, T.J., Satoh, K. (ed.): *Photosystem II. The Light-Driven Water:Plastoquinone Oxidoreductase*. Pp. 71-93. Springer, Dordrecht 2005. [215 ref.]
- Noguchi, T., Berthomieu, C.: Molecular analysis by vibrational spectroscopy. – In: Wydrzynski, T.J., Satoh, K. (ed.): *Photosystem II. The Light-Driven Water:Plastoquinone Oxidoreductase*. Pp. 367-387. Springer, Dordrecht 2005. [150 ref.]
- Nott, A., Jung, H.-S., Koussevitzky, S., Chory, J.: Plastid-to-nucleus retrograde signalling. – *Annu. Rev. Plant Biol.* **57**: 739-759, 2006. [Chl; 95 ref.]
- Nozaki, H.: A new scenario of plastid evolution: plastid primary endosymbiosis before the divergence of the "Plantae", emended. – *J. Plant Res.* **118**: 247-255, 2005. [68 ref.]
- Paoletti, E., Grulke, N.E.: Does living in elevated CO₂ ameliorate tree response to ozone? A review on stomatal responses. – *Environ. Pollut.* **137**: 483-493, 2005. [Ps; 128 ref.]
- Petrouleas, V., Crofts, A.R.: The iron-quinone acceptor complex. – In: Wydrzynski, T.J., Satoh, K. (ed.): *Photosystem*

- II. The Light-Driven Water:Plastoquinone Oxidoreductase. Pp. 177-206 Springer, Dordrecht 2005. [217 ref.]
- Pfanschmidt, T.: Acclimation to varying light qualities: Toward the functional relationship of state transitions and adjustment of photosystem stoichiometry. – *J. Phycol.* **41**: 723-725, 2005. [20 ref.]
- Pogson, B.J., Rissler, H.M., Frank, H.A.: The role of carotenoids in energy quenching. – In: Wydrzynski, T.J., Satoh, K. (ed.): *Photosystem II. The Light-Driven Water:Plastoquinone Oxidoreductase*. Pp. 515-537. Springer, Dordrecht 2005. [192 ref.]
- Raval, M.K., Biswal, B., Biswal, U.C.: The mystery of oxygen evolution: analysis of structure and function of Photosystem II, the water-plastoquinone oxido-reductase. – *Photosynth. Res.* **85**: 267-293, 2005. [324 ref.]
- Renger, G., Holzwarth, A.R.: Primary electron transfer. – In: Wydrzynski, T.J., Satoh, K. (ed.): *Photosystem II. The Light-Driven Water:Plastoquinone Oxidoreductase*. Pp. 139-175. Springer, Dordrecht 2005. [236 ref.]
- Römer, S., Fraser, P.D.: Recent advances in carotenoid biosynthesis, regulation and manipulation. – *Planta* **221**: 305-308, 2005. [37 ref.]
- Sage, R.F., McKown, A.D.: Is C₄ photosynthesis less phenotypically plastic than C₃ photosynthesis? – *J. exp. Bot.* **57**: 303-317, 2006. [127 ref.]
- Satoh, K., Wydrzynski, T.J., Govindjee: Introduction to Photosystem II. – In: Wydrzynski, T.J., Satoh, K. (ed.): *Photosystem II. The Light-Driven Water:Plastoquinone Oxidoreductase*. Pp. 11-22. Springer, Dordrecht 2005. [103 ref.]
- Scheibe, R., Backhausen, J.E., Emmerlich, V., Holtgreffe, S.: Strategies to maintain redox homeostasis during photosynthesis under changing conditions. – *J. exp. Bot.* **56**: 1481-1489, 2005. [89 ref.]
- Schoefs, B.: Protochlorophyllide reduction – what is new in 2005? – *Photosynthetica* **43**: 329-343, 2005. [97 ref.]
- Šesták, Z., Čatský, J.: Bibliography of reviews and methods of photosynthesis – 89. – *Photosynthetica* **43**: 621-640, 2005. [553 ref.]
- Shen, J.-R., Kamiya, N.: 3D crystal structure of the Photosystem II core. – In: Wydrzynski, T.J., Satoh, K. (ed.): *Photosystem II. The Light-Driven Water:Plastoquinone Oxidoreductase*. Pp. 449-467. Springer, Dordrecht 2005. [98 ref.]
- Shinkarev, V.: Flash-induced oxygen evolution and other oscillatory processes. – In: Wydrzynski, T.J., Satoh, K. (ed.): *Photosystem II. The Light-Driven Water:Plastoquinone Oxidoreductase*. Pp. 539-565. Springer, Dordrecht 2005. [69 ref.]
- Sinclair, T.R., Purcell, L.C.: Is a physiological perspective relevant in a “genocentric” age? – *J. exp. Bot.* **56**: 2777-2782, 2005. [Ps; 12 ref.]
- Smith, A.M., Zeeman, S.C., Smith, S.M.: Starch degradation. – *Annu. Rev. Plant Biol.* **56**: 73-98, 2005. [Chloroplast; 128 ref.]
- Taylor, M., Ramsay, G.: Carotenoid biosynthesis in plant storage organs: recent advances and prospects for improving plant food quality. – *Physiol. Plant.* **124**: 143-151, 2005. [65 ref.]
- Telfer, A.: Too much light? How β -carotene protects the photosystem II reaction centre. – *Photochem. photobiol. Sci.* **4**: 950-956, 2005. [68 ref.]
- Terashima, I., Hanba, Y.T., Tazoe, Y., Vyas, P., Yano, S.: Irradiance and phenotype: comparative eco-development of sun and shade leaves in relation to photosynthetic CO₂ diffusion. – *J. exp. Bot.* **57**: 343-354, 2006. [77 ref.]
- Theg, S.M., Shi, L.-X.: Protein transport and post-translational processing in Photosystem II biosynthesis and homeostasis. – In: Wydrzynski, T.J., Satoh, K. (ed.): *Photosystem II. The Light-Driven Water:Plastoquinone Oxidoreductase*. Pp. 669-682. Springer, Dordrecht 2005. [99 ref.]
- Thornton, L.E., Roose, J.L., Pakrasi, H.B., Ikeuchi, M.: The low molecular weight proteins of Photosystem II. – In: Wydrzynski, T.J., Satoh, K. (ed.): *Photosystem II. The Light-Driven Water:Plastoquinone Oxidoreductase*. Pp. 121-137. Springer, Dordrecht 2005. [109 ref.]
- Van Gorkom, H.J., Yocum, C.F.: The calcium and chloride cofactors. – In: Wydrzynski, T.J., Satoh, K. (ed.): *Photosystem II. The Light-Driven Water:Plastoquinone Oxidoreductase*. Pp. 307-327. Springer, Dordrecht 2005. [133 ref.]
- Van Rensen, J.J.S., Klimov, V.V.: Bicarbonate interactions. – In: Wydrzynski, T.J., Satoh, K. (ed.): *Photosystem II. The Light-Driven Water:Plastoquinone Oxidoreductase*. Pp. 329-345. Springer, Dordrecht 2005. [87 ref.]
- Vandermeiren, K., Black, C., Pleijel, H., De Temmerman, L.: Impact of rising tropospheric ozone on potato: effects on photosynthesis, growth, productivity and yield quality. – *Plant Cell Environ.* **28**: 982-996, 2005. [Ps; 95 ref.]
- Walker, T.L., Purton, S., Becker, D.K., Collet, C.: Microalgae as bioreactors. – *Plant Cell Rep.* **24**: 629-641, 2005. [128 ref.]
- Weber, A.P.M., Schwacke, R., Flugge, U.-I.: Solute transporters of the plastid envelope membrane. – *Annu. Rev. Plant Biol.* **56**: 133-164, 2005. [155 ref.]
- Weber, H., Borisjuk, L., Wobus, U.: Molecular physiology of legume seed development. – *Annu. Rev. Plant Biol.* **56**: 253-279, 2005. [Ps, plastids; 166 ref.]
- Wingler, A., Purdy, S., MacLean, J.A., Pourtau, N.: The role of sugars in integrating environmental signals during the regulation of leaf senescence. – *J. exp. Bot.* **57**: 391-399, 2006. [Ps, Chl; 75 ref.]
- Witt, H.T.: Photosystem II: Structural elements, the first 3D crystal structure and functional implications. – In: Wydrzynski, T.J., Satoh, K. (ed.): *Photosystem II. The Light-Driven Water:Plastoquinone Oxidoreductase*. Pp. 425-447. Springer, Dordrecht 2005. [114 ref.]
- Yachandra, V.K.: The catalytic manganese cluster: Organization of the metal ions. – In: Wydrzynski, T.J., Satoh, K. (ed.): *Photosystem II. The Light-Driven Water:Plastoquinone Oxidoreductase*. Pp. 235-260 Springer, Dordrecht 2005. [121 ref.]
- Yamaguchi, K., Mayfield, S.P., Sugita, M.: Transcriptional and translational regulation of Photosystem II gene expression. – In: Wydrzynski, T.J., Satoh, K. (ed.): *Photosystem II. The Light-Driven Water:Plastoquinone Oxidoreductase*. Pp. 649-668. Springer, Dordrecht 2005. [183 ref.]

METHODOLOGICAL PAPERS

A. Energy transformation, electron transfer, C fixation, and related methods

- Albert, K.R., Mikkelsen, T.N., Ro-Poulsen, H.: Effects of ambient versus reduced UV-B radiation on high arctic *Salix arctica* assessed by measurements and calculations of chlorophyll *a* fluorescence parameters from fluorescence transients. – *Physiol. Plant.* **124**: 208-226, 2005. [Models.]
- Amunts, A., Ben-Shem, A., Nelson, N.: Solving the structure of plant photosystem I – biochemistry is vital. – *Photochem. photobiol. Sci.* **4**: 1011-1015, 2005. [Model.]
- Ananyev, G., Dismukes, G.C.: How fast can Photosystem II split water? Kinetic performance at high and low frequencies. – *Photosynth. Res.* **84**: 355-365, 2005. [Model.]
- Andrés, J., Oliva, M., Safont, V.S., Moliner, V., Tapia, O.: Transition-state structures for describing the enzyme-catalyzed mechanisms of rubisco. – *Theor. Chem. Accounts* **101**: 234-240, 1999. [Model.]
- Baffert, C., Romain, S., Richardot, A., Leprêtre, J.-C., Lefebvre, B., Deronzier, A., Collomb, M.-N.: Electrochemical and chemical formation of $[\text{Mn}_4^{\text{IV}}\text{O}_5(\text{terpy})_4(\text{H}_2\text{O})_2]^{6+}$, in relation with the photosystem II oxygen-evolving center model $[\text{Mn}_2^{\text{III,IV}}\text{O}_2(\text{terpy})_2(\text{H}_2\text{O})_2]^{3+}$. – *J. amer. chem. Soc.* **127**: 13694-13704, 2005.
- Barber, J., Nield, J., Morris, E.P., Hankamer, B.: Subunit positioning in photosystem II revisited. – *Trends biol. Sci.* **24**: 43-45, 1999.
- Cape, J.L., Bowman, M.K., Kramer, D.M.: Understanding the cytochrome *bc* complexes by what they don't do. The Q-cycle at 30. – *Trends Plant Sci.* **11**: 46-55, 2006. [Models; review, 60 ref.]
- Cournac, L., Mus, F., Bernard, L., Guedeney, G., Vignais, P., Peltier, G.: Limiting steps of hydrogen production in *Chlamydomonas reinhardtii* and *Synechocystis* PCC 6803 as analysed by light-induced gas exchange transients. – *Int. J. Hydrogen Energy* **27**: 1229-1237, 2002. [Models.]
- Dani, D.N., Sainis, J.K.: Isolation and characterization of a thylakoid membrane module showing partial light and dark reactions. – *Biochim. biophys. Acta* **1669**: 43-52, 2005.
- Dau, H., Haumann, M.: Considerations on the mechanism of photosynthetic water oxidation – dual role of oxo-bridges between Mn ions in (i) redox-potential maintenance and (ii) proton abstraction from substrate water. – *Photosynth. Res.* **84**: 325-331, 2005. [Models.]
- Díaz-Moreno, I., Díaz-Quintana, A., Molina-Heredia, F.P., Nieto, P.M., Hansson, Ö., De La Rosa, M.A., Karlsson, B.G.: NMR analysis of the transient complex between membrane photosystem I and soluble cytochrome *c*₆. – *J. biol. Chem.* **280**: 7925-7931, 2005. [Model.]
- Díaz-Moreno, I., Díaz-Quintana, A., Ubbink, M., De La Rosa, M.A.: An NMR-based docking model for the physiological transient complex between cytochrome *f* and cytochrome *c*₆. – *FEBS Lett.* **579**: 2891-2896, 2005.
- Eaton-Rye, J.J.: Requirements for different combinations of the extrinsic proteins in specific cyanobacterial Photosystem II mutants. – *Photosynth. Res.* **84**: 275-281, 2005. [Model.]
- Essen, L.-O., Siegert, R., Lehmann, W.D., Oesterhelt, D.: Lipid patches in membrane protein oligomers: Crystal structure of bacteriorhodopsin-lipid complex. – *Proc. nat. Acad. Sci. USA* **95**: 11673-11678, 1998. [Model.]
- Goltsev, V., Chernev, P., Zaharieva, I., Lambrev, P., Strasser, R.J.: Kinetics of delayed chlorophyll *a* fluorescence registered in milliseconds time range. – *Photosynth. Res.* **84**: 209-215, 2005. [Model.]
- Gomes-Laranjo, J., Salgado, P., Wong Fong Sang, H.W., Kraayenhof, R., Torres-Pereira, J.: Isolation of chestnut chloroplasts: Membrane potentials of chestnut and spinach thylakoids. – *Photosynthetica* **43**: 237-246, 2005.
- Hasegawa, J., Nakatsuji, H.: Mechanism and unidirectionality of the electron transfer in the photosynthetic reaction center of *Rhodospseudomonas viridis*: SAC-CI theoretical study. – *J. phys. Chem. B* **102**: 10420-10430, 1998. [Model.]
- Hendler, R.W.: An apparent general solution for the kinetic models of the bacteriorhodopsin photocycles. – *J. phys. Chem. B* **109**: 16515-16528, 2005.
- Hendrickson, L., Förster, B., Pogson, B.J., Chow, W.S.: A simple chlorophyll fluorescence parameter that correlates with the rate coefficient of photoinactivation of Photosystem II. – *Photosynth. Res.* **84**: 43-49, 2005.
- Hienerwadel, R., Gourion-Arsiquaud, S., Ballottari, M., Bassi, R., Diner, B.A., Berthomieu, C.: Formate binding near the redox-active Tyrosine_D in Photosystem II: consequences on the properties of Tyr_D. – *Photosynth. Res.* **84**: 139-144, 2005. [Model.]
- Holzwarth, A.R., Müller, M.G., Reus, M., Nowaczyk, M., Sander, J., Rögner, M.: Kinetics and mechanism of electron transfer in intact photosystem II and in the isolated reaction center: Pheophytin is the primary electron acceptor. – *Proc. nat. Acad. Sci. USA* **103**: 6895-6900, 2006. [Models.]
- Chow, W.S., Lee, H.-Y., He, J., Hendrickson, L., Hong, Y.-N., Matsubara, S.: Photoinactivation of Photosystem II in leaves. – *Photosynth. Res.* **84**: 35-41, 2005. [Model.]
- Irving, L.J., Robinson, D.: A dynamic model of Rubisco turnover in cereal leaves. – *New Phytol.* **169**: 493-504, 2006.
- Iwamoto, K., Shiraiwa, Y.: Technical improvement in the purification of enzymes from red algae using an aqueous two-phase partitioning system. – *Phycol. Res.* **53**: 164-168, 2005.
- Jahren, A.H., Petersen, G., Seberg, O.: Plant DNA: A new substrate for carbon stable isotope analysis and a potential paleoenvironmental indicator. – *Geology* **32**: 241-244, 2004. [Ps, δ¹³C.]
- Janssen, M., Patiño, R., Stockar, U. von: Application of bench-scale biocalorimetry to photoautotrophic cultures. – *Thermochim. Acta* **435**: 18-27, 2005. [Scheme of device,

- irradiation system.]
- Jolley, C., Ben-Shem, A., Nelson, N., Fromme, P.: Structure of plant photosystem I revealed by theoretical modeling. – *J. biol. Chem.* **280**: 33627-33636, 2005.
- Kawamori, A., Ono, T.-A., Ishii, A., Nakazawa, S., Hara, H., Tomo, T., Minagawa, J., Bittl, R., Dzuba, S.A.: The functional sites of chlorophylls in D1 and D2 subunits of Photosystem II identified by pulsed EPR. – *Photosynth. Res.* **84**: 187-192, 2005. [Model.]
- Kern, J., Loll, B., Zouni, A., Saenger, W., Irrgang, K.-D., Biesiadka, J.: Cyanobacterial Photosystem II at 3.2 Å resolution – the plastoquinone binding pockets. – *Photosynth. Res.* **84**: 153-159, 2005. [Model.]
- Kobayashi, M., Watanabe, S., Gotoh, T., Koizumi, H., Itoh, Y., Akiyama, M., Shiraiwa, Y., Tsuchiya, T., Miyashita, H., Mimuro, M., Yamashita, T., Watanabe, T.: Minor but key chlorophylls in Photosystem II. – *Photosynth. Res.* **84**: 201-207, 2005. [Models.]
- Kósa, A., Márton, Z., Böddi, B.: Fast phototransformation of the 636 nm-emitting protochlorophyllide form in epicotyls of dark-grown pea (*Pisum sativum*). – *Physiol. Plant.* **124**: 132-142, 2005. [Model.]
- Kriek, M., Neylon, C., Roach, P.L., Clark, I.P., Parker, A.W.: New and simple setup for the study on microvolume frozen samples using Raman spectroscopy. – *Rev. sci. Instrum.* **76**: DOI: 10.1063/1.2054486, 2005.
- Kurayama, F., Matsuyama, T., Yamamoto, H.: A feasibility study of a new photosynthesis bioreactor design using TiO₂ particles combined with enzymes. – *Adv. Powder Technol.* **15**: 51-61, 2004.
- Kurayama, F., Matsuyama, T., Yamamoto, H.: Kinetic study of a new photosynthesis bioreactor design using TiO₂ particles combined with enzymes. – *Adv. Powder Technol.* **16**: 517-533, 2005. [Artificial photosynthesis.]
- Lee, S.C., Chien, L.F., Van, R.C., Hsiao, Y.Y., Hong, J.L., Pan, R.L.: Radiation inactivation analysis of thylakoid protein kinase systems in light and in darkness. – *Photosynthetica* **44**: 116-124, 2006. [Model.]
- MacKenzie, T.D.B., Johnson, J.M., Campbell, D.A.: Dynamics of fluxes through photosynthetic complexes in response to changing light and inorganic carbon acclimation in *Synechococcus elongatus*. – *Photosynth. Res.* **85**: 341-357, 2005. [Calculation formulae for PS2 activity.]
- Marchese, J.A., Ming, L.C., Ducati, C., Broetto, F., Da Silva, E.: Carbon isotope composition as a tool to control the quality of herbs and medicinal plants. – *Photosynthetica* **44**: 155-159, 2006. [$\delta^{13}\text{C}$.]
- Mesquita, R.C., Mansanares, A.M., Da Silva, E.C., Barja, P.R., Miranda, L.C.M., Vargas, H.: Open acoustic cell: Applications in plant photosynthesis studies. – *Instrument. Sci. Technol.* **34**: 33-58, 2006. [Review, 43 ref.]
- Mino, H., Itoh, S.: The origin of split EPR signals in the Ca²⁺-depleted Photosystem II. – *Photosynth. Res.* **84**: 333-337, 2005.
- Nakatsuji, H., Hasegawa, J., Ohkawa, K.: Excised states and electron transfer mechanism in the photosynthetic reaction center of *Rhodospseudomonas viridis*: SAC-CI study. – *Chem. Phys. Lett.* **296**: 499-504, 1998. [Models.]
- Palenčár, P., Vácha, F., Kutý, M.: Force field development on pigments of photosystem 2 reaction centre. – *Photosynthetica* **43**: 417-420, 2005.
- Quiles, M.J.: Photoinhibition of photosystems I and II using chlorophyll fluorescence measurements. – *J. biol. Educ.* **39**: 136-138, 2005.
- Reinot, T., Zazubovich, V., Hayes, J.M., Small, G.J.: New insights on persistent nonphotochemical hole burning and its application to photosynthetic complexes. – *J. phys. Chem. B* **105**: 5083-5098, 2001.
- Ross, P., Tronson, D., Ritchie, R.J.: Modelling photosynthesis to increase conceptual understanding. – *J. biol. Educ.* **40**: 84-88, 2005.
- Şener, M.K., Jolley, C., Ben-Shem, A., Fromme, P., Nelson, N., Croce, R., Schulte, K.: Comparison of the light-harvesting networks of plant and cyanobacterial photosystem I. – *Biophys. J.* **89**: 1630-1642, 2005. [Models.]
- Shinkarev, V.P., Zybailov, B., Vassiliev, I.R., Golbeck, J.H.: Modeling of the P700⁺ charge recombination kinetics with phyloquinone and plastoquinone-9 in the A₁ site of photosystem I. – *Biophys. J.* **83**: 2885-2897, 2002.
- Štys, D., Schoefberger, W., Halbhuber, Z., Ristvejova, J., Müller, N., Ettrich, R.: Secondary structure estimation of recombinant *psbH*, encoding a photosynthetic membrane protein of cyanobacterium *Synechocystis* sp. PCC 6803. – *Photosynthetica* **43**: 421-424, 2005. [Model.]
- Suzuki, T., Ohta, H., Enami, I.: Cross-reconstitution of the extrinsic proteins and Photosystem II complexes from *Chlamydomonas reinhardtii* and *Spinacia oleracea*. – *Photosynth. Res.* **84**: 239-244, 2005. [Model.]
- Synková, H., Schnablová, R., Hušák, M., Šíffl, P., Bumba, L., Hunalová, I., Čefovská, N., Vácha, F.: Isolation and characterization of paracrystalline structures from transgenic *Pssu-ipt* tobacco. – *Photosynthetica* **43**: 509-517, 2005.
- Tyystjärvi, E., Hakala, M., Sarvikas, P.: Mathematical modelling of the light response curve of photoinhibition of Photosystem II. – *Photosynth. Res.* **84**: 21-27, 2005.
- Vaitekonis, S., Trinkunas, G., Valkunas, L.: Red chlorophylls in the exciton model of Photosystem I. – *Photosynth. Res.* **86**: 185-201, 2005.
- Van Grondelle, R., Novoderezhkin, V.I.: Energy transfer in photosynthesis: experimental insights and quantitative models. – *Phys. Chem. chem. Phys.* **8**: 793-807, 2006.
- Walters, M.A., Roche, C.L., Rheingold, A.L., Kassel, S.W.: N-H...S hydrogen bonds in a ferredoxin model. – *Inorg. Chem.* **44**: 3777-3779, 2005.
- Wang, W.W., Knopf, G.K., Bassi, A.S.: Photoelectric properties of a detector based on dried bacteriorhodopsin film. – *Biosensors Bioelectronics* **21**: 1309-1319, 2006. [Scheme of the photodetector.]
- Zhu, X.-G., Govindjee, Baker, N.R., deSturler, E., Ort, D.R., Long, S.P.: Chlorophyll *a* fluorescence induction kinetics in leaves predicted from a model describing each discrete step of excitation energy and electron transfer associated with Photosystem II. – *Planta* **223**: 114-133, 2005.

B. Analysis of chloroplast pigments and their *in vivo* complexes

- Andrizhiyevskaya, E.G., Chojnicka, A., Bautista, J.A., Diner, B.A., Van Grondelle, R., Dekker, J.P.: Origin of the F685 and F695 fluorescence in Photosystem II. – *Photosynth. Res.* **84**: 173-180, 2005. [Model.]
- Balaban, T.S.: Relevance of the diastereotopic ligation of magnesium atoms of chlorophylls in the major light-harvesting complex II (LHC II) of green plants. – *Photosynth. Res.* **86**: 251-262, 2005. [Models.]
- Baranski, R., Baranska, M., Schulz, H.: Changes in carotenoid content and distribution in living plant tissue can be observed and mapped in situ using NIF-FT-Raman spectroscopy. – *Planta* **222**: 448-457, 2005.
- Becker, F., Rhiel, E.: Immuno-electron microscopic quantification of the fucoxanthin chlorophyll *a/c* binding polypeptides Fcp2, Fcp4, and Fcp6 of *Cyclotella cryptica* grown under low- and high-light intensities. – *Int. Microbiol.* **9**: 29-36, 2006. [Immunogold labelling of ultrathin cell sections.]
- Belefant-Miller, H., Miller, G.H., Rutger, J.N.: Non-destructive measurement of carotenoids in plant tissues by fluorescence quenching. – *Crop Sci.* **45**: 1786-1789, 2005.
- Bicanic, D., Luterotti, S., Becucci, M., Fogliano, V., Versloot, P.: Photoacoustic measurement of lutein in biological matrix. – *J. Phys. IV France* **125**: 825-828, 2005. [Experimental set-up.]
- Cavender-Bares, J., Bazzaz, F.A.: From leaves to ecosystems: Using chlorophyll fluorescence to assess photosynthesis and plant function in ecological studies. – In: Papageorgiou, G.C., Govindjee (ed.): *Chlorophyll *a* Fluorescence. A Signature of Photosynthesis*. Pp. 737-755. Springer, Dordrecht 2004. [Review, 109 ref.]
- Colyer, C.L., Kinkade, C.S., Viskari, P.J., Landers, J.P.: Analysis of cyanobacterial pigments and proteins by electrophoretic and chromatographic methods. – *Anal. bioanal. Chem.* **382**: 559-569, 2005. [Review; 88 ref.]
- Cseh, Z., Vianelli, A., Rajagopal, S., Krumova, S., Kovács, L., Papp, E., Barzda, V., Jennings, R., Garab, G.: Thermooptically induced recognitions in the main light harvesting antenna of plants. I. Non-Arrhenius type of temperature dependence and linear light-intensity dependencies. – *Photosynth. Res.* **86**: 263-273, 2005. [Models.]
- Falkowski, P.G., Koblížek, M., Gorbunov, M., Kolber, Z.: Development and application of variable chlorophyll fluorescence techniques in marine ecosystems. – In: Papageorgiou, G.C., Govindjee (ed.): *Chlorophyll *a* Fluorescence. A Signature of Photosynthesis*. Pp. 757-778. Springer, Dordrecht 2004. [Review, 69 ref.]
- Felzl, L., Pacáková, V., Štulík, K., Volka, K.: Reliability of carotenoid analyses: A review. – *Curr. anal. Chem.* **1**: 93-102, 2005. [Review, 130 ref.]
- Frassanito, R., Cantonati, M., Tardio, M., Mancini, I., Guella, G.: On-line identification of secondary metabolites in freshwater microalgae and cyanobacteria by combined liquid chromatography-photodiode array detection-mass spectrometric techniques. – *J. Chromatogr. A* **1082**: 33-42, 2005.
- Frigaard, N.-U., Li, H., Martinsson, P., Das, S.K., Frank, H.A., Aartsma, T.J., Bryant, D.A.: Isolation and characterization of carotenosomes from a bacteriochlorophyll *c*-less mutant of *Chlorobium tepidum*. – *Photosynth. Res.* **86**: 101-111, 2005.
- Georgakopoulou, S., Van Grondelle, R., Van der Zwan, G.: Explaining the visible and near-infrared circular dichroism spectra of light-harvesting 1 complexes from purple bacteria. A modeling study. – *J. phys. Chem. B* **110**: 3344-3353, 2006.
- Gregor, J., Maršálek, B.: Freshwater phytoplankton quantification by chlorophyll *a*: a comparative study of *in vitro*, *in vivo* and *in situ* methods. – *Water Res.* **38**: 517-522, 2004.
- Gregor, J., Maršálek, B.: A simple *in vivo* fluorescence method for the selective detection and quantification of freshwater cyanobacteria and eukaryotic algae. – *Acta hydrochim. hydrobiol.* **33**: 142-148, 2005.
- Hochberg, E.J., Apprill, A.M., Atkinson, M.J., Bidigare, R.R.: Bio-optical modeling of photosynthetic pigments in corals. – *Coral Reefs* **25**: 99-109, 2006.
- Hölzel, R., Calander, N., Chiragwandi, Z., Willander, M., Bier, F.F.: Trapping single molecules by dielectrophoresis. – *Phys. Rev. Lett.* **95**: 128102-1-128102-4, 2005. [Phycocerythrin model.]
- Hori, T., Aratani, N., Takagi, A., Matsumoto, T., Kawai, T., Yoon, M.-C., Yoon, Z.S., Cho, S., Kim, D., Osuka, A.: Giant porphyrin wheels with large electronic coupling as models of light-harvesting photosynthetic antenna. – *Chemistry eur. J.* **12**: 1319-1327, 2006.
- Kalita, D., Morisue, M., Kobuke, Y.: Synthesis and electrochemical properties of slipped-cofacial porphyrin dimers of ferrocene-functionalized Zn-imidazolyl-porphyrins as potential terminal electron donors in photosynthetic models. – *New J. Chem.* **30**: 77-92, 2006.
- Kolb, C.A., Schreiber, U., Gademann, R., Pfündel, E.E.: UV-A screening in plants determined using a new portable fluorimeter. – *Photosynthetica* **43**: 371-377, 2005.
- Kolber, Z., Klimov, D., Ananyev, G., Rascher, U., Berry, J., Osmond, B.: Measuring photosynthetic parameters at a distance: laser induced fluorescence transient (LIFT) method for remote measurements of photosynthesis in terrestrial vegetation. – *Photosynth. Res.* **84**: 121-129, 2005.
- Lababpour, A., Lee, C.-G.: Simultaneous measurement of chlorophyll and astaxanthin in *Haematococcus pluvialis* cells by first-order derivative ultraviolet-visible spectrophotometry. – *J. Biosci. Bioeng.* **101**: 104-110, 2006. [Comparison in different solvents.]
- Lesellier, E., Tchaplal, A.: A simple subcritical chromatographic test for an extended ODS high performance liquid chromatography column classification. – *J. Chromatogr. A* **1100**: 45-59, 2005. [Car.]
- Lesellier, E., West, C., Tchaplal, A.: Classification of special octadecyl-bonded phases by the carotenoid test. – *J. Chromatogr. A* **1111**: 62-70, 2006.
- Lichtenthaler, H.K., Buschmann, C., Knapp, M.: How to correctly determine the different chlorophyll fluorescence parameters and the chlorophyll fluorescence decrease ratio

- R_{fd} of leaves with the PAM fluorometer. – *Photosynthetica* **43**: 379-393, 2005.
- Lichtenthaler, H.K., Langsdorf, G., Lenk, S., Buschmann, C.: Chlorophyll fluorescence imaging of photosynthetic activity with the flash-lamp fluorescence imaging system. – *Photosynthetica* **43**: 355-369, 2005.
- Liu, Z., Pawliszyn, J.: Application of capillary isoelectric focusing with liquid-core waveguide laser-induced fluorescence whole-column imaging detection. – *Anal. Biochem.* **336**: 94-101, 2005. [Phycobiliproteins, experimental set-up.]
- Melkozernov, A.N., Kargul, J., Lin, S., Barber, J., Blankenship, R.E.: Spectral and kinetic analysis of the energy coupling in the PS I-LHC I supercomplex from the green alga *Chlamydomonas reinhardtii* at 77 K. – *Photosynth. Res.* **86**: 203-215, 2005. [Model.]
- Murillo-Amador, B., Avila-Serrano, N.Y., García-Hernández, J.L., López-Aguilar, R., Troyo-Diéguez, E., Kaya, C.: Relationship between a nondestructive and an extraction method for measuring chlorophyll contents in cowpea leaves. – *J. Plant Nutr. Soil Sci.* **167**: 363-364, 2004.
- Murphy, R.J., Tolhurst, T.J., Chapman, M.G., Underwood, A.J.: Estimation of surface chlorophyll-*a* on an emerged mudflat using field spectrometry: accuracy of ratios and derivative-based approaches. – *Int. J. remote Sens.* **26**: 1835-1859, 2005.
- Nedbal, L., Březina, V., Červený, J., Trtílek, M.: Photosynthesis in dynamic light: systems biology of unconventional chlorophyll fluorescence transients in *Synechocystis* sp. PCC 6803. – *Photosynth. Res.* **84**: 99-106, 2005. [Model.]
- Padyana, A.K., Ramakumar, S.: Lateral energy transfer model for adjacent light-harvesting antennae rods of C-phycoyanins. – *Biochim. biophys. Acta* **1757**: 161-165, 2006.
- Papagiannakis, E., Van Stokkum, I.H.M., Fey, H., Büchel, C., Van Grondelle, R.: Spectroscopic characterization of the excitation energy transfer in the fucoxanthin-chlorophyll protein of diatoms. – *Photosynth. Res.* **86**: 241-250, 2005. [Model.]
- Renzullo, L.J., Blanchfield, A.L., Guillermin, R., Powell, K.S., Held, A.A.: Comparison of PROSPECT and HPLC estimation of leaf chlorophyll contents in a grapevine stress study. – *Int. J. remote Sensing* **27**: 817-823, 2006.
- Reuss, N., Conley, D.J.: Effects of sediment storage conditions on pigment analyses. – *Limnol. Oceanogr. Methods* **3**: 477-487, 2005.
- Sakamoto, A., Matsuno, S., Tasumi, M.: Construction of picosecond time-resolved Raman spectrometers with near-infrared excitation. – *J. Raman Spectrosc.* **37**: 429-435, 2006. [β-carotene.]
- Schansker, G., Strasser, R.J.: Quantification of non-Q_B-reducing centers in leaves using a far-red pre-illumination. – *Photosynth. Res.* **84**: 145-151, 2005.
- Stoń-Egiert, J., Kosakowska, A.: RP-HPLC determination of phytoplankton pigments—comparison of calibration results for two columns. – *Mar. Biol.* **147**: 251-260, 2005.
- Thomassen, P.J., Foekema, J., Lluch, R.J., Thordarson, P., Elemans, J.A.A.W., Nolte, R.J.M., Rowan, A.E.: Self-assembly studies of allosteric photosynthetic antenna model systems. – *New J. Chem.* **30**: 148-155, 2006.
- Trinkunas, G., Freiberg, A.: A disordered polaron model for polarized fluorescence excitation spectra of LH1 and LH2 bacteriochlorophyll antenna aggregates. – *J. Luminescence* **119**: 105-110, 2006.
- Urboniene, V., Vrublevskaja, O., Gall, A., Trinkunas, G., Robert, B., Valkunas, L.: Temperature broadening of LH2 absorption in glycerol solution. – *Photosynth. Res.* **86**: 49-59, 2005. [Model.]
- Wang, G., Zhou, B., Zeng, C.: Isolation, properties and spatial site analysis of γ subunits of B-phycoerythrin and R-phycoerythrin. – *Sci. China C* **41**: 9-17, 1998.
- Wang, W.-J., Wang, G.-C., Zhang, M., Tseng, C.K.: Isolation of fucoxanthin from the rhizoid of *Laminaria japonica* Aresch. – *J. integr. Plant Biol.* **47**: 1009-1015, 2005.
- Wasmund, N., Topp, I., Schories, D.: Optimising the storage and extraction of chlorophyll samples. – *Oceanologia* **48**: 125-144, 2006.
- Zapata, M.: Recent advances in pigment analysis as applied to picophytoplankton. – *Vie Milieu* **55**: 233-248, 2005. [Review, 118 ref.]

C. Analysis of gas exchange and accumulation of dry matter and energy

- Beck, S.L., Visser, G., Dunlop, R.W.: A comparison of direct (flow cytometry) and indirect (stomatal guard cell lengths and chloroplast numbers) techniques as a measure of ploidy in black wattle, *Acacia mearnsii* (de Wild). – *South afr. J. Bot.* **71**: 354-358, 2005.
- Büchner, B., Korpiun, P.: Modeling the thermal part of pulse modulated photoacoustic effect on leaves. – *J. Phys. IV France* **125**: 697-699, 2005.
- Buckley, T.N., Roberts, D.W.: DESPOT, a process-based tree growth model that allocates carbon to maximize carbon gain. – *Tree Physiol.* **26**: 129-144, 2006.
- Buckley, T.N., Roberts, D.W.: How should leaf area, sapwood area and stomatal conductance vary with tree height to maximize growth? – *Tree Physiol.* **26**: 145-157, 2006. [Model.]
- Burrows, E.H., Bubier, J.L., Mosedale, A., Cobb, G.W., Crill, P.M.: Net ecosystem exchange of carbon dioxide in a temperate poor fen: a comparison of automated and manual chamber techniques. – *Biogeochemistry* **76**: 21-45, 2005.
- Cegelski, L., Schaefer, J.: NMR determination of photorespiration in intact leaves using *in vivo* ¹³CO₂ labeling. – *J. magnetic Resonance* **178**: 1-10, 2006.
- Combe, L.: Nouvelle méthode de suivi au champ de la sénescence des feuilles de maïs. – *Can. J. Bot.* **83**: 941-953, 2005.
- Czöbel, S., Fóti, S., Balogh, J., Nagy, Z., Bartha, S., Tuba, Z.: Chamber series and space-scale analysis of CO₂ gas-exchange in grassland vegetation: A novel approach. – *Photosynthetica* **43**: 267-272, 2005. [CO₂ and H₂O gas

- exchange chambers.]
- Dudeja, S.S., Chaudhary, P.: Fast chlorophyll fluorescence transient and nitrogen fixing ability of chickpea nodulation variants. – *Photosynthetica* **43**: 253-259, 2005. [Phenomenological leaf, models.]
- Dugan, N.R.: Using Dirichlet tessellation to help estimate microbial biomass concentrations. – *J. microbiol. Methods* **63**: 205-210, 2005. [Cyanobacteria.]
- Jávorfi, T., Erostyák, J., Gál, J., Buzády, A., Menczel, L., Garab, G., Naqvi, K.R.: Quantitative spectrophotometry using integrating cavities. – *J. Photochem. Photobiol. B* **82**: 127-131, 2006. [Isolated chloroplasts.]
- Johnson, D.M., Smith, W.K.: Refugial forests of the southern Appalachians: photosynthesis and survival in current-year *Abies fraseri* seedlings. – *Tree Physiol.* **25**: 1379-1387, 2005. [Model of carbon gain.]
- Kagawa, A., Sugimoto, A., Yamashita, K., Abe, H.: Temporal photosynthetic carbon isotope signatures revealed in a tree ring through $^{13}\text{C}_2$ pulse-labelling. – *Plant Cell Environ.* **28**: 906-915, 2005. [^{13}C pulse-labelling apparatus.]
- Komatsu, H., Kumagai, T., Hotta, N.: Is surface conductance theoretically independent of reference height? – *Hydrolog. Processes* **19**: 339-347, 2005.
- Korpiun, P., Büchner, B.: Modeling photoacoustic pulse measurements of oxygen evolution and carbondioxid uptake in leaves during photosynthesis. – *J. Phys. IV France* **125**: 701-703, 2005.
- Mattson, W.J., Julkunen-Tiitto, R., Herms, D.A.: CO_2 enrichment and carbon partitioning to phenolics: do plant responses accord better with the protein competition or the growth differentiation balance models? – *Oikos* **111**: 337-347, 2005.
- Miyazawa, S.-I., Livingston, N.J., Turpin, D.H.: Stomatal development in new leaves is related to the stomatal conductance of mature leaves in poplar (*Populus trichocarpa* \times *P. deltoides*). – *J. exp. Bot.* **57**: 373-380, 2006. [Scheme of cuvette system.]
- Newsham, K.K., Geissler, P.A., Nicolson, M.J., Peat, H.J., Lewis-Smith, R.I.: Sequential reduction of UV-B radiation in the field alters the pigmentation of an Antarctic leafy liverwort. – *Environ. exp. Bot.* **54**: 22-32, 2005. [Small hole screen.]
- Phattaralerphong, J., Sinoquet, H.: A method for 3D reconstruction of tree crown volume from photographs: assessment with 3D-digitized plants. – *Tree Physiol.* **25**: 1229-1242, 2005.
- Pilarski, J., Rajba, S.: Measurement of light gradient in plant organs with a fiber optic microprobe. – *Acta Physiol. Plant.* **26**: 405-410, 2004.
- Rascher, U., Bobich, E.G., Osmond, C.B.: The “Kluge-Lüttge Kammer”: A preliminary evaluation of an enclosed, Crassulacean acid metabolism (CAM) mesocosm that allows separation of synchronized and desynchronized contributions of plants to whole system gas exchange. – *Plant Biol.* **8**: 167-174, 2006.
- Scotford, I.M., Miller, P.C.H.: Estimating tiller density and leaf area index of winter wheat using spectral reflectance and ultrasonic sensing techniques. – *Biosystems Eng.* **89**: 395-408, 2004.
- Wang, Y., MacKenzie, T., Morse, D.: Purification of plastids from the dinoflagellate *Lingulodinium*. – *Mar. Biotechnol.* **7**: 659-668, 2005.
- Whitehead, D., Griffin, K.L., Turnbull, M.H., Tissue, D.P., Engel, V.C., Brown, K.J., Schuster, W.S.F., Walcroft, A.S.: Response of total daily photosynthesis for leaves in a *Quercus rubra* L. canopy: implications for modeling canopy CO_2 exchange. – *Global Change Biol.* **10**: 925-938, 2004.

D. Canopies and aquatic communities: analysis of structure, production, and mass and energy exchange

- Ahn, Y.H., Shanmugam, P., Moon, J.E.: Retrieval of ocean colour from high resolution multi-spectral imagery for monitoring highly dynamic ocean features. – *Int. J. remote Sensing* **27**: 367-392, 2006. [Model.]
- Ahuja, L.R., Ma, L., Timlin, D.J.: Trans-disciplinary soil physics research critical to synthesis and modeling of agricultural systems. – *Soil Sci. Soc. Amer. J.* **70**: 311-326, 2006.
- Alagarwamy, G., Boote, K.J., Allen, L.H., Jr., Jones, J.W.: Evaluating the CROPGRO-soybean model ability to simulate photosynthesis response to carbon dioxide levels. – *Agron. J.* **98**: 34-42, 2006.
- Allen, J.I., Blackford, J.C., Radford, P.J.: An 1-D vertically resolved modelling study of the ecosystem dynamics of the middle and southern Adriatic Sea. – *J. mar. Syst.* **18**: 265-286, 1998.
- Aranibar, J.N., Berry, J.A., Riley, W.J., Pataki, D.E., Law, B.E., Ehleringer, J.R.: Combining meteorology, eddy fluxes, isotope measurements, and modeling to understand environmental controls of carbon isotope discrimination at the canopy scale. – *Global Change Biol.* **12**: 710-730, 2006.
- Bauerle, W.L., Timlin, D.J., Pachepsky, Y.A., Anantharamu, S.: Adaptation of the biological simulation model MAESTRA for use in a generic user interface. – *Agron. J.* **98**: 220-228, 2006.
- Baums, A.-B., Goldberg, V., Bernhofer, C.: Upgrading the coupled vegetation boundary layer model HIRVAC by new soil water and interception modules. – *Meteorol. Zeit.* **14**: 211-218, 2005.
- Beck, P.S.A., Atzberger, C., Høgda, K.A., Johansen, B., Skidmore, A.K.: Improved monitoring of vegetation dynamics at very high latitudes: A new method using MODIS NDVI. – *Remote Sens. Environ.* **100**: 321-334, 2006.
- Bénié, G.B., Kaboré, S.S., Goïta, K., Courel, M.-F.: Remote sensing-based spatio-temporal modeling to predict biomass in Sahelian grazing ecosystem. – *Ecol. Modell.* **184**: 341-354, 2005.
- Blanco, J.A., Zavala, M.A., Imbert, J.B., Castillo, F.J.: Sustainability of forest management practices: Evaluation through a simulation model of nutrient cycling. – *Forest Ecol. Manage.* **213**: 209-228, 2005.
- Boles, S., Wofsy, S., Moore III, B., Ojima, D.: Modeling

- gross primary production of temperate deciduous broadleaf forest using satellite images and climate data. – *Remote Sens. Environ.* **91**: 256-270, 2004.
- Branco, A.B., Kremer, J.N.: The relative importance of chlorophyll and colored dissolved organic matter (CDOM) to the prediction of the diffuse attenuation coefficient in shallow estuaries. – *Estuaries* **28**: 643-652, 2005.
- Broström, G.: A note of the C/N and C/P ration of the biological production in the Nordic seas. – *Tellus* **50B**: 93-109, 1998. [Model.]
- Çamdevýren, H., Demýr, N., Kanik, A., Keskýn, S.: Use of principal component scores in multiple linear regression models for prediction of *Chlorophyll-a* in reservoirs. – *Ecol. Modell.* **181**: 581-589, 2005.
- Carreiras, J.M.B., Pereira, J.M.C., Pereira, J.S.: Estimation of tree canopy cover in evergreen oak woodlands using remote sensing. – *Forest Ecol. Manage.* **223**: 45-53, 2006.
- Cho, H.J., Poirrier, M.A.: A model to estimate potential submersed aquatic vegetation habitat based on studies in Lake Pontchartrain, Louisiana. – *Restoration Evol.* **13**: 623-629, 2005.
- Corp, L.A., Middleton, E.M., McMurtrey, J.E., Entcheva Campbell, P.K., Butcher, L.M.: Fluorescence sensing techniques for vegetation assessment. – *Appl. Optics* **45**: 1023-1033, 2006.
- Crise, A., Allen, J.I., Baretta, J., Crispi, G., Mosetti, R., Solidoro, C.: The Mediterranean pelagic ecosystem response to physical forcing. – *Progr. Oceanogr.* **44**: 219-243, 1999. [Models; review, 57 ref.]
- Davi, H., Dufrêne, E., Granier, A., Le Dantec, V., Barbaroux, C., François, C., Bréda, N.: Modelling carbon and water cycles in a beech forest. Part II: Validation of the main processes from organ to stand scale. – *Ecol. Modell.* **185**: 387-405, 2005.
- Davies-Colley, R.J., Rutherford, J.C.: Some approaches for measuring and modelling riparian shade. – *Ecol. Engin.* **24**: 525-530, 2005.
- Devred, E., Fuentes-Yacco, C., Sathyendranath, S., Caverhill, C., Maass, H., Stuart, V., Platt, T., White, G.: A semi-analytic seasonal algorithm to retrieve chlorophyll-*a* concentration in the Northwest Atlantic Ocean from SeaWiFS data. – *Indian J. mar. Sci.* **34**: 356-367, 2005. [Model.]
- Dingkuhn, M., Luquet, D., Kim, H., Tambour, L., Clement-Vidal, A.: *EcoMeristem*, a model of morphogenesis and competition among sinks in rice. 2. Simulating genotype responses to phosphorus deficiency. – *Funct. Plant Biol.* **33**: 325-337, 2006.
- Dodds, W.K., Biggs, B.J.F., Lowe, R.L.: Photosynthesis-irradiance patterns in benthic microalgae: variations as a function of assemblage thickness and community structure. – *J. Phycol.* **35**: 42-53, 1999. [Model.]
- Doxaran, D., Cherukuru, N., Lavender, S.J.: Apparent and inherent optical properties of turbid estuarine waters: measurements, empirical quantification relationships, and modeling. – *Appl. Opt.* **45**: 2310-2324, 2006.
- Dransfeld, S., Tatnall, A.R., Robinson, I.S., Mobley, C.D.: Prioritizing ocean colour channels by neural network input reflectance perturbation. – *Int. J. remote Sens.* **26**: 1043-1048, 2005.
- Dufrêne, E., Davi, H., François, C., le Maire, G., Le Dantec, V., Granier, A.: Modelling carbon and water cycles in a beech forest. Part I: Model description and uncertainty analysis on modelled NEE. – *Ecol. Modell.* **185**: 407-436, 2005.
- Duursma, R.A., Marshall, J.D., Nippert, J.B., Chambers, C.C., Robinson, A.P.: Estimating leaf-level parameters for ecosystem process models: a study in mixed conifer canopies on complex terrain. – *Tree Physiol.* **25**: 1347-1359, 2005.
- East, T.L., Sharfstein, B.: Development of a decision tree model for the prediction of the limitation potential of phytoplankton in Lake Okeechobee Florida, USA. – *Arch. Hydrobiol.* **165**: 127-144, 2006.
- Erlandsson, C.P., Stigebrandt, A.: Increased utility of the Secchi disk to assess eutrophication in coastal waters with freshwater run-off. – *J. mar. Systems* **60**: 19-29, 2006.
- Evans, D.L., Roberts, S.D., Parker, R.C.: LiDAR – A new tool for forest measurements? – *Forestry Chronicle* **82**: 211-218, 2006. [Light Detection and Ranging.]
- Evans, N.T., Short, F.T.: Functional trajectory models for assessment of transplanted eelgrass, *Zostera marina* L., in the Great Bay Estuary, New Hampshire. – *Estuaries* **28**: 936-947, 2005.
- Felzer, B., Reilly, J., Melillo, J., Kicklighter, D., Sarofim, M., Wang, C., Prinn, R., Zhuang, Q.: Future effects of ozone on carbon sequestration and climate change policy using a global biogeochemical model. – *Climatic Change* **73**: 345-373, 2005.
- Feng, H., Campbell, J.W., Dowell, M.D., Moore, T.S.: Modeling spectral reflectance of optically complex waters using bio-optical measurements from Tokyo Bay. – *Remote Sensing Environ.* **99**: 232-243, 2005.
- Fujii, M., Yoshie, N., Yamanaka, Y., Chai, F.: Simulated biogeochemical responses to iron enrichments in three high nutrient, low chlorophyll (HNLC) regions. – *Progr. Oceanogr.* **64**: 307-324, 2005. [Model.]
- Ghirardi, M.L., King, P.W., Posewitz, M.C., Maness, P.C., Fedorov, A., Kim, K., Cohen, J., Schulten, K., Seibert, M.: Approaches to developing biological H₂-photoproducing organisms and processes. – *Biochem. Soc. Trans.* **33**: 70-72, 2005. [Model.]
- Gower, J., King, S., Borstad, G., Brown, L.: Detection of intense plankton blooms using the 709 nm band of the MERIS imaging spectrometer. – *Int. J. remote Sensing* **26**: 2005-2012, 2005.
- Greaver, T., Sternberg, L. da S.L., Schaffer, B., Modero, T.: An empirical method of measuring CO₂ recycling by isotopic enrichment of respired CO₂. – *Agr. Forest Meteorol.* **128**: 67-79, 2005.
- Grégoire, M., Beckers, J.M.: Modeling the nitrogen fluxes in the Black Sea using a 3D coupled hydrodynamical-biogeochemical model: transport versus biogeochemical processes, exchanges across the shelf break and comparison of the shelf and deep sea ecodynamics. – *Biogeosciences* **1**: 33-61, 2004.
- Hicke, J.A.: MCEP and GISS solar radiation data sets available for ecosystem modeling: Description, differences, and impacts on net primary production. – *Global biogeochem. Cycles* **19**(2), GB2006, doi: 10.1029/2004GB002391,

- 2005.
- Higgins, S.N., Hecky, R.E., Guildford, S.J.: Modeling the growth, biomass, and of *Cladophora glomerata* tissue phosphorus concentration in eastern Lake Erie: Model description and field testing. – J. Great Lakes Res. **31**: 439-455, 2005.
- Huisman, J., van Oostveen, P., Weissing, F.J.: Species dynamics in phytoplankton blooms: Incomplete mixing and competition for light. – Amer. Natur. **54**: 46-68, 1999. [Model.]
- Huisman, J., Weissing, F.J.: Biodiversity of plankton by species oscillations and chaos. – Nature **402**: 407-410, 1999. [Model.]
- Jesus, B., Brotas, V., Marani, M., Paterson, D.M.: Spatial dynamics of microphytobenthos determined by PAM fluorescence. – Estuar. coast. Shelf Sci. **65**: 30-42, 2005.
- Kameda, T., Ishizaka, J.: Size-fractionated primary production estimated by a two-phytoplankton community model applicable to ocean color remote sensing. – J. Oceanogr. **61**: 663-672, 2005.
- Kim, Y., Wang, G.L.: Modeling seasonal vegetation variation and its validation against Moderate Resolution Imaging spectroradiometer (MODIS) observations over North America. – J. geophys. Res. **110**(D4)2005.
- Kish, P.A.: Evaluation of herbicide impact on periphyton community structure using the Matlock periphytometer. – J. Freshwater Ecol. **21**: 341-348, 2006.
- Komatsu, H.: Relation between canopy height and the reference value of surface conductance for closed coniferous stands. – Hydrolog. Processes **17**: 2503-2517, 2003.
- Koné, V., Machu, E., Penven, P., Andersen, V., Garçon, V., Fréon, P., Demarco, H.: Modeling the primary and secondary productions of the southern Benguela upwelling system: A comparative study through two biogeochemical models. – Global biogeochem. Cycles **19**(4): doi:10.1029/2004GB002427, 2005.
- Kutser, T.: Quantitative detection of chlorophyll in cyanobacterial blooms by satellite remote sensing. – Limnol. Oceanogr. **49**: 2179-2189, 2004. [Model.]
- Kutser, T., Dekker, A.G., Skirving, W.: Modeling spectral discrimination of Great Barrier Reef benthic communities by remote sensing instruments. – Limnol. Oceanogr. **48**: 497-510, 2003.
- Kutser, T., Pierson, D.C., Kallio, K.Y., Reinart, A., Sobek, S.: Mapping lake CDOM by satellite remote sensing. – Remote Sens. Environ. **94**: 535-540, 2005. [Coloured dissolved organic matter.]
- Kutser, T., Pierson, D.C., Tranvik, L., Reinart, A., Sobek, S., Kallio, K.: Using satellite remote sensing to estimate the colored dissolved organic matter absorption coefficient in lakes. – Ecosystems **8**: 1-14, 2005.
- Lavoie, D., Denman, K., Michel, C.: Modeling ice algal growth and decline in a seasonally ice-covered region of the Arctic (Resolute Passage, Canadian Archipelago). – J. geophys. Res. **110**(C11009): doi:10.1029/2005JC002922, 2005.
- Lee, J.H., Arega, F.: Eutrophication dynamics of Tolo Harbour, Hong Kong. – Mar. Pollut. Bull. **39**: 187-192, 1999. [Model.]
- Lee, Z., Carder, K.L., Mobley, C.D., Steward, R.G., Patch, J.S.: Hyperspectral remote sensing for shallow waters: 2. Deriving bottom depths and water properties by optimization. – Appl. Optics **38**: 3831-3843, 1999. [Model.]
- Lee, Z.-P., Darecki, M., Carder, K.L., Davis, C.O., Stramski, D., Rhea, W.J.: Diffuse attenuation coefficient of downwelling irradiance: An evaluation of remote sensing methods. – J. geophys. Res. **110**: C0217, doi:10/1029/2004JC002573, 2005.
- Li, Y., Shang, S., Zhang, C., Ma, X., Huang, L., Wu, J., Zeng, Y.: Remote sensing of algal blooms using a turbidity-free function for near-infrared and red signals. – Chin. Sci. Bull. **51**: 464-471, 2006.
- Liu, Z., Stewart, G., Cochran, J.K., Lee, C., Armstrong, R.A., Hirschberg, D.J., Gasser, B., Miquel, J.-C.: Why do POC concentrations measured using Niskin bottle collections sometimes differ from those using *in-situ* pumps? – Deep-Sea Res. I **52**: 1324-1344, 2005. [Particulate organic carbon; comparison of methods.]
- Manninen, T., Stenberg, P., Rautiainen, M., Voipio, P., Smolander, H.: Leaf area index estimation of boreal forest using ENVISA ASAR. – IEEE Trans. Geosci. remote Sens. **43**: 2627-2635, 2005.
- Marcelli, M., Caburazzi, M., Perilli, A., Piermattei, V., Fresi, E.: Deep chlorophyll maximum distribution in the central Tyrrhenian Sea described by a towed undulating vehicle. – Chem. Ecol. **21**: 351-367, 2005.
- Marks, C.O., Lechowicz, M.J.: A holistic tree seedling model for the investigation of functional trait diversity. – Ecol. Modell. **193**: 141-181, 2006.
- Martineau, Y., Saugier, B.: Comportement contre-intuitif d'une modèle mécaniste de succession végétale. – Compt. rend. Biol. **329**: 21-30, 2006.
- Maselli, F., Chirici, G., Bottai, L., Corona, P., Marchetti, M.: Estimation of Mediterranean forest attributes by the application of k-NN procedures to multitemporal Landsat ETM+ images. – Int. J. remote Sens. **26**: 3781-3796, 2005.
- Medlyn, B.E., Berbigier, P., Clement, R., Grelle, A., Loustau, D., Linder, S., Wingate, L., Jarvis, P.G., Sigurdsson, B.D., McMurtrie, R.E.: Carbon balance of coniferous forests growing in contrasting climates: Model-based analysis. – Agr. Forest Meteorol. **131**: 97-124, 2005.
- Milchunas, D.G., Mosier, A.R., Morgan, J.A., LeCain, D.R., King, J.Y., Nelson, J.A.: Root production and tissue quality in a shortgrass steppe exposed to elevated CO₂: Using a new ingrowth method. – Plant Soil **268**: 111-122, 2005.
- Millard, E.S., Fee, E.J., Myles, D.D., Dahl, J.A.: Comparison of phytoplankton photosynthesis methodology in Lakes Erie, Ontario, the Bay of Quinte and the Northwest Ontario Lake Size Series. – In: Munawar, M., Edsall, T., Munawar, I.F.: (ed.): State of Lake Erie (SOLE): Past, Present and Future. Pp. 441-468. Buckhuys Publ., Leiden 1999.
- Millie, D.F., Weckman, G.R., Paerl, H.W., Pinckney, J.L., Bendis, B.J., Pigg, R.J., Fahnenstiel, G.L.: Neural net modeling of estuarine indicators: Hindcasting phytoplankton biomass and net ecosystem production in the Neuse (North Carolina) and Trout (Florida) rivers, USA. – Ecol. Indicators **6**: 589-608, 2006.
- Millie, D.F., Weckman, G.R., Pigg, R.J., Tester, P.A.,

- Dyble, J., Litaker, R.W., Carrick, H.J., Fahnenstiel, G.L.: Modeling phytoplankton abundance in Saginaw Bay, Lake Huron: Using artificial neural networks to discern functional influence of environmental variables and relevance to a great lakes observing system. – *J. Phycol.* **42**: 336-349, 2006.
- Monje, O., Stutte, G., Chapman, D.: Microgravity does not alter plant stand gas exchange of wheat at moderate light levels and saturating CO₂ concentration. – *Planta* **222**: 336-345, 2005. [Scheme of biomass production system.]
- Möttus, M., Sulev, M.: Radiation fluxes and canopy transmittance: Models and measurements inside a willow canopy. – *J. geophys. Res.* **111** (D02109): doi: 10.1029/2005JD005932, 2006.
- Murphy, R.J., Underwood, A.J., Pinkerton, M.H., Range, P.: Field spectrometry: New methods to investigate epilithic micro-algae on rocky shores. – *J. exp. mar. Biol. Ecol.* **325**: 111-124, 2005.
- Nakata, K., Doi, T.: Estimation of primary production in the ocean using a physical-biological coupled ocean carbon cycle model. – *Environ. Modell. Software* **21**: 204-228, 2006.
- Nowak, R.S., Ellsworth, D.S., Smith, S.D.: Functional responses of plants to elevated atmospheric data from FACE experiments support early predictions? – *New Phytol.* **162**: 253-280, 2004. [Review, 150 ref.]
- Oren, R., Hsieh, C.I., Stoy, P., Albertson, J., McCarthy, H.R., Harrell, P., Katul, G.G.: Estimating the uncertainty in annual net ecosystem carbon exchange: spatial variation in turbulent fluxes and sampling errors in eddy-covariance measurements. – *Global Change Biol.* **12**: 883-896, 2006.
- Peña, J.P., Tarara, J.: A portable whole canopy gas exchange system for several mature field-grown grapevines. – *Vitis* **43**: 7-14, 2004.
- Peters, L., Scheiffhacken, N., Kahlert, M., Rothhaupt, K.-O.: An efficient *in situ* method for sampling periphyton in lakes and streams. – *Arch. Hydrobiol.* **163**: 133-141, 2005.
- Sampson, D.A., Waring, R.H., Maier, C.A., Gough, C.M., Ducey, M.J., Johnsen, K.H.: Fertilization effects on forest carbon storage and exchange, and net primary production: A new hybrid process model for stand management. – *Forest Ecol. Manage.* **221**: 91-109, 2006.
- Schlerf, M., Atzberger, C.: Inversion of a forest reflectance model to estimate structural canopy variables from hyperspectral remote sensing data. – *Remote Sens. Environ.* **100**: 281-294, 2006.
- Schmidtlin, S.: Imaging spectroscopy as a tool for mapping Ellenberg indicator values. – *J. appl. Ecol.* **42**: 966-974, 2005.
- Schober, E., Kurmayer, R.: Evaluation of different DNA sampling techniques for the application of the real-time PCR method for the quantification of cyanobacteria in water. – *Lett. appl. Microbiol.* **42**: 412-417, 2006.
- Siswanto, E., Ishizaka, J., Yokouchi, K.: Optimal primary production model and parametrization in the eastern East China Sea. – *J. Oceanogr.* **62**: 361-372, 2006.
- Smyth, T.J., Tilstone, G.H., Groom, S.B.: Integration of radiative transfer into satellite models of ocean primary production. – *J. geophys. Res. - Oceans* **110** (C10014): doi:10.1029/2004JC002784, 2005.
- Sokoletsky, L., Dubinsky, Z., Shoshany, M., Stambler, N.: Estimation of phytoplankton pigment concentration in the Gulf of Aqaba (Eilat) by *in situ* and remote sensing-wavelength algorithms. – *Int. J. remote Sens.* **24**: 5049-5073, 2003.
- Sonohat, G., Balandier, P., Ruchaud, F.: Predicting solar radiation transmittance in the understory of even-aged coniferous stands in temperate forests. – *Ann. Forest Sci.* **61**: 629-641, 2004.
- Szeikielda, K.H.: Use of the first and second chlorophyll absorption bands for marine biogeochemical patch recognition. – *Indian J. mar. Sci.* **34**: 387-395, 2005.
- Takahashi, W., Kawamura, H.: Detection method of the Kuroshio front using the satellite-derived chlorophyll-*a* images. – *Remote Sens. Environ.* **97**: 83-91, 2005.
- Testi, L., Orgaz, F., Villalobos, F.J.: Variations in bulk canopy conductance of an irrigated olive (*Olea europaea* L.) orchard. – *Environ. exp. Bot.* **55**: 15-28, 2006. [Model.]
- Thingstad, T.F.: Simulating the response to phosphate additions in the oligotrophic eastern Mediterranean using an idealized four-member microbial food web model. – *Deep-Sea Res. II* **52**: 3074-3089, 2005.
- Tian, Y., Zhu, Y., Cao, W.: Monitoring leaf photosynthesis with canopy spectral reflectance in rice. – *Photosynthetica* **43**: 481-489, 2005. [Remote sensing.]
- Vallino, J.J., Hopkinson, C.S., Garritt, R.H.: Estimating estuarine gross production, community respiration and net ecosystem production: a nonlinear inverse technique. – *Ecol. Modell.* **187**: 281-296, 2005.
- van Donk, E., Santamaría, L., Mooij, W.M.: Climate warming causes regime shifts in lake food webs? A reassessment. – *Limnol. Oceanogr.* **48**: 1350-1353, 2003. [Model.]
- Wangersky, P.J.: Methods of sampling and analysis and our concepts of ocean dynamics. – *Scientia marina* **69** (Suppl. 1): 75-84, 2005. [Review; 60 ref.]
- Watts, L.J., Kumari, B., Maass, H.: Applications of remotely-sensed ocean colour data in the Arabian Sea: A review. – *Indian J. mar. Sci.* **34**: 396-407, 2005.
- Werdell, P.J., Bailey, S.W.: An improved *in-situ* bio-optical data set for ocean color algorithm development and satellite data product validation. – *Remote Sens. Environ.* **98**: 122-140, 2005.
- Xiao, X., Zhang, Q., Brasswell, B., Urbanski, S., Boles, S., Wofsy, S., Moore, B., III, Ojima, D.: Modeling gross primary production of temperate deciduous broadleaf forest using satellite images and climate data. – *Remote Sens. Environ.* **91**: 256-270, 2004.
- Xiao, X., Zhang, Q., Hollinger, D., Aber, J., Moore, B., III.: Modeling gross primary production of an evergreen needleleaf forest using MODIS and climate data. – *Ecol. Appl.* **15**: 954-969, 2005. [Ps.]
- Xu, J., Hood, R.R., Chao, S.-Y.: A simple empirical optical model for simulating light attenuation variability in a partially mixed estuary. – *Estuaries* **28**: 572-580, 2005.
- Yoshie, N., Fujii, M., Yamanaka, Y.: Ecosystem changes after the SEEDS iron fertilization in the western North Pacific simulated by a one-dimensional ecosystem model. – *Progr. Oceanogr.* **64**: 283-306, 2005.

- Yoshimoto, M., Oue, H., Kobayashi, K.: Energy balance and water use efficiency of rice canopies under free-air CO₂ enrichment. – *Agr. Forest Meteorol.* **133**: 226-246, 2005.
- Zavala, M.A.: A model of stand dynamics for holm Oak-Aleppo Pine Forests. – *Ecol. Stud.* **137** [Rodà, F. *et al.* (ed.): *Ecology of Mediterranean Evergreen Oak Forests*]: 106-117, 1999.
- Zavala, M.A., de la Parra, R.B.: A mechanistic model of tree competition and facilitation for Mediterranean forests: Scaling from leaf physiology to stand dynamics. – *Ecol. Modell.* **188**: 76-92, 2005.
- Zavala, M.A., Zea, E.: Mechanisms maintaining biodiversity in Mediterranean pine-oak forests: insights from a spatial simulation model. – *Plant Ecol.* **171**: 197-207, 2004.
- Zippel, B., Neu, T.R.: Growth and structure of phototrophic biofilms under controlled light conditions. – *Water Sci. Technol.* **52**: 203-209, 2005.

E. Measurement of leaf area, and surface and volume of plant organs

- Arora, V.K., Boer, G.J.: A parameterization of leaf phenology for the terrestrial ecosystem component of climate models. – *Global Change Biol.* **11**: 39-59, 2005.
- Blanco, F.F., Folegatti, M.V.: A new method for estimating the leaf area index of cucumber and tomato plants. – *Horticult. bras.* **21**: 668-671, 2003.
- Blanco, F.F., Folegatti, M.V.: Estimations of leaf area for greenhouse cucumber by linear measurements under salinity and grafting. – *Scientia agr. (Piracicaba)* **62**: 305-309, 2005.
- Davi, H., Soudani, K., Deckx, T., Dufrêne, E., Le Dantec, V., François, C.: Estimation of forest leaf area index from SPOT imagery using NDVI distribution over forest stands. – *Int. J. remote Sens.* **27**: 885-902, 2006.
- De Sousa, E.F., Araujo, M.C., Posse, R.P., Detmann, E., Bernardo, S., Berbert, P.A., Dos Santos, P.A.: Estimating the total leaf area of the green dwarf coconut tree (*Cocos nucifera* L.). – *Sci. agricola (Piracicaba)* **62**: 597-600, 2005.
- Dovey, S.B., du Toit, B.: Calibration of LAI-2000 canopy analyser with leaf area index in a young eucalypt stand. – *Trees* **20**: 273-277, 2006.
- Gaeckle, J.L., Short, F.T., Ibarra-Obando, S.E., Meling-López, A.E.: Sheath length as a monitoring tool for calculating leaf growth in eelgrass (*Zostera marina* L.). – *Aquat. Bot.* **84**: 226-232, 2006.
- Gamper, H.: Nondestructive estimates of leaf area in white clover using predictive formulae: The contribution of genotype identity to trifoliate leaf area. – *Crop Sci.* **45**: 2552-2556, 2005.
- Heiskanen, J.: Estimating aboveground tree biomass and leaf area index in a mountain birch forest using ASTER satellite data. – *Int. J. remote Sens.* **27**: 1135-1158, 2006.
- Igathinathane, C., Prakash, V.S.S., Padma, U., Babu, G.R., Womac, A.P.: Interactive computer software development for leaf area measurement. – *Computers Electronics Agr.* **51**: 1-16, 2006.
- Ishida, M.: Automatic thresholding for digital hemispherical photography. – *Can. J. Forest Res.* **34**: 2208-2216, 2004.
- Kalácska, M., Sánchez-Azofeifa, A., Caelli, T., Rivard, B., Boerlage, B.: Estimating leaf area index from satellite imagery using Bayesian networks. – *IEEE Trans. Geosci. remote Sensing* **43**: 1866-1873, 2005.
- Lopes, C., Monteiro, A., Rückert, F.E., Gruber, B., Stenberg, B., Schultz, H.R.: Transpiration of grapevines and cohabitating cover crop and weed species in a vineyard. A “snapshot” at diurnal trends. – *Vitis* **43**: 111-117, 2004. [Scanned leaf images.]
- Lopes, C., Pinto, P.A.: Easy and accurate estimation of grapevine leaf area with simple mathematical models. – *Vitis* **44**: 55-61, 2005.
- Rautiainen, M.: Retrieval of leaf area index for a coniferous forest by inverting a forest reflectance model. – *Remote Sens. Environ.* **99**: 295-303, 2005.
- Roberts, S.D., Dean, T.J., Evans, D.L., McCombs, J.W., Harrington, R.L., Glass, P.A.: Estimating individual tree leaf area in loblolly pine plantations using LiDAR-derived measurements of height and crown dimensions. – *Forest Ecol. Manage.* **213**: 54-70, 2005.
- Rouphael, Y., Rivera, C.M., Cardarelli, M., Fanasca, S., Colla, G.: Leaf area estimation from linear measurements in zucchini plants of different ages. – *J. horticult. Sci. Biotechnol.* **81**: 238-241, 2006.
- Sbrissia, A.F., Da Silva, S.C., Molan, L.K., Sarmiento, D.O.L., Andrade, F.M.E., Lupinacci, A.V., Gonçalves, A.C.: A simple method for measuring tiller volume of grasses. – *Grass Forage Sci.* **59**: 406-410, 2004.
- Tsialtas, J.T., Maslaris, N.: Leaf area estimation in a sugar beet cultivar by linear models. – *Photosynthetica* **43**: 477-479, 2005.
- Zhang, Y.Q., Chen, J.M., Miller, J.R.: Determining digital hemispherical photograph exposure for leaf area index estimation. – *Agr. Forest Meteorol.* **133**: 166-181, 2005.

F. PAR and environmental measurements

- Alton, P.B., North, P., Kaduk, J., Los, S.: Radiative transfer modeling of direct and diffuse sunlight in a Siberian pine forests. – *J. geophys. Res.* **119**: D23209, doi: 10.1029/2005JD006060.
- Leigh, A., Close, J.D., Ball, M.C., Siebke, K., Nicotra, A.B.: Leaf cooling curves: measuring leaf temperature in sunlight. – *Funct. Plant Biol.* **33**: 515-519, 2006.
- Leuchner, M., Fabian, P., Werner, H.: Spectral multichannel monitoring of radiation within a mature mixed forest. – *Plant Biol.* **7**: 619-627, 2005.
- Ylianttila, L., Visuri, R., Huurto, L., Jokela, K.: Evaluation of a single-monochromator diode array spectroradiometer for sunbed UV-radiation measurements. – *Photochem. Photobiol.* **81**: 333-341, 2005.

G. Cultivation of experimental materials and phytotronics

- Banerjee, A., Sharma, R., Chisti, Y., Banerjee, U.C.: *Botryococcus braunii*: A renewable source of hydrocarbons and other chemicals. – Crit. Rev. Biotechnol. **22**: 245-279, 2002. [Bioreactors.]
- Bertoni, R., Balseiro, E.: Mixing layer running incubator (MIRI): an instrument for incubating samples while moving vertically in the mixing layer. – Limnol. Oceanogr.: Methods **3**: 158-163, 2005.
- Carlozzi, P., Pinzani, E.: Growth characteristics of *Arthrospira platensis* cultured inside a new close-coil photobioreactor incorporating a mandrel to control culture temperature. – Biotechnol. Bioeng. **90**: 675-684, 2005. [Solar receiver; daily biomass balance; comparison of bioreactors.]
- Chen, C.-Q., Chen, F.: Growing phototrophic cells without light. – Biotechnol. Lett. **28**: 607-616, 2006. [Review, 68 ref.]
- Da Silva, J.A.T., Giang, D.D.T., Tanaka, N.: Photoautotrophic micropropagation of *Spathiphyllum*. – Photosynthetica **44**: 53-61, 2006. [Cultivation system.]
- Fedorov, A.S., Kosourov, S., Ghirardi, M.L., Seibert, M.: Continuous hydrogen photoproduction by *Chlamydomonas reinhardtii*. – Appl. Biochem. Biotechnol. **121**: 403-412, 2005. [Computer-controlled two-stage chemostat.]
- García-Malea, M.C., Acien, F.G., Fernández, J.M., Cerón, M.C., Molina, E.: Continuous production of green cells of *Haematococcus pluvialis*: Modeling of the irradiance effect. – Enzyme microb. Technol. **38**: 981-989, 2006.
- Hargreaves, J.A.: Photosynthetic suspended-growth systems in aquaculture. – Aquacult. Eng. **34**: 344-363, 2006. [Review, 86 ref.]
- Laurinavichene, T.V., Fedorov, A.S., Ghirardi, M.L., Seibert, M., Tsygankov, A.A.: Demonstration of sustained hydrogen photoproduction by immobilized, sulphur-deprived *Chlamydomonas reinhardtii* cells. – Int. J. Hydrogen Energy **31**: 659-667, 2006. [Scheme of a photobioreactor.]
- Merchuk, J.C., Wu, X.: Modeling of photobioreactors: Application to bubble column simulation. – J. appl. Phycol. **15**: 163-170, 2003.
- Mock, T., Hoch, N.: Long-term temperature acclimation of photosynthesis in steady-state cultures of the polar diatom *Fragilariopsis cylindrus*. – Photosynth. Res. **85**: 307-317, 2005. [Steady-state culture chambers.]
- Molina Grima, E., Belarbi, E.-H., Acien Fernández, F.G., Robles Medina, A., Chisti, Y.: Recovery of microalgae biomass and metabolites: process options and economics. – Biotechnol. Adv. **20**: 491-515, 2003. [Review, 82 ref.]
- Nowack, E.C.M., Podola, B., Melkonian, M.: The 96-well twin-layer system: A novel approach in the cultivation of microalgae. – Protist **156**: 239-251, 2005.
- Rorrer, G.L., Cheney, D.P.: Bioprocess engineering of cell and tissue cultures for marine seaweeds. – Aquacult. Eng. **32**: 11-41, 2004. [Photobioreactors, models.]
- Wu, X., Merchuk, J.C.: Measurement of fluid flow in the downcomer of an internal loop airlift reactor using an optical trajectory-tracking system. – Chem. Eng. Sci. **58**: 1599-1614, 2003.
- Wu, X., Merchuk, J.C.: Simulation of algae growth in a bench scale internal loop airlift reactor. – Chem. Eng. Sci. **59**: 2899-2912, 2004. [Model.]

H. Choice of useful tools and laboratory equipment

- Bergey, E.A., Getty, G.M.: A review of methods for measuring the surface area of stream substrates. – Hydrobiologia **556**: 7-16, 2006. [Chl; review, 25 ref.]
- Bicanic, D., Westra, E., Seters, J., Van Houten, S., Huberts, D., Colić-Barić, I., Cozijnsen, J., Boshoven, H.: Photoacoustic and optothermal studies of tomato ketchup adulterated by the red beet (*Beta vulgaris*). – J. Phys. IV France **125**: 807-810, 2005. [Photoacoustic cell.]
- Goddijn, L.M., White, M.: Using a digital camera for water quality measurements in Galway Bay. – Estuar. coast. Shelf Sci. **66**: 429-436, 2006. [Chl.]
- Okamoto, K., Onai, K., Furusawa, T., Ishiura, M.: A portable integrated automatic apparatus for the real-time monitoring of bioluminescence in plants. – Plant Cell Environ. **28**: 1305-1315, 2005.
- Pearson, G., Lago-Leston, A., Valente, M., Serrão, E.: Simple and rapid RNA extraction from free-dried tissue of brown algae and seagrasses. – Eur. J. Phycol. **41**: 97-104, 2006.
- Ren, Q., Zhao, Y.-P., Han, L., Zhao, H.-B.: A nano-mechanical device based on light-driven proton pumps. – Nanotechnology **17**: 1778-1785, 2006. [Bacteriorhodopsin, simulation of natural machinery in converting solar energy to mechanical energy.]
- Ross, J.A., Zvyagin, A.V., Heckenberg, N.R., Upcroft, J., Upcroft, P., Rubinsztein-Dunlop, H.: Measurement of action spectra of light-activated processes. – J. biomed. Optics **11** (1): 1083-3668/2006/11(1)/4008/4, 2006.
- Terasawa, K., Sato, N.: Visualization of plastid nucleoids in situ using the PEND-GFP fusion protein. – Plant Cell Physiol. **46**: 649-660, 2005. [Chloroplast.]
- Verslues, P.E., Agarwal, M., Katiyar-Agarwal, S., Zhu, J., Zhu, J.-K.: Methods and concepts in quantifying resistance to drought, salt and freezing, abiotic stresses that affect plant water status. – Plant J. **45**: 523-539, 2006.
- Wang, S.-B., Chen, F., Sommerfeld, M., Hu, Q.: Isolation and proteomic analysis of cell wall-deficient *Haematococcus pluvialis* mutants. – Proteomics **5**: 4839-4851, 2005.