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Aartsma, T.J., Matysik, J. (ed.): **Biophysical Techniques in Photosynthesis. Volume II.** – Springer, Dordrecht 2008. ISBN 978-1-4020-8249-8 (hard-bound), 978-1-4020-8250-4 (e-book). 517 pp., € 234.33.

In 1996, volume 3 of the series Advances in Photosynthesis and Respiration dealing with biophysical techniques used in photosynthesis research appeared. Its editors were well-known scientists in this research field, Jan Amesz and Arnold J. Hoff. Unfortunately, both already passed away to a better world (Jan in 2001 and Arnold in 2002). This is why a second book on this topic was edited by two scientists working at present in the Leiden University of the Netherlands.

The reviewed book, volume 26 of the series, consists of twenty four chapters that describe the most modern procedures and apparatuses used for biophysical research in photosynthesis. Of course, the majority of these methods can be used also in biophysical and biochemical studies on other plant, animal, bacterial, *etc*. topics.

The chapters are divided in five categories. First part entitled "Imaging" contains four chapters dealing with atomic force microscopy, nonlinear optical microscopy, three-dimensional electron microscopy, and magnetic resonance imaging. They are used for studies of proteins of the bacterial photosynthetic apparatus (especially of *Blastochloris*, *Rhodospirillum*, *Phaeospirillum*, and *Rhodobacter*), electron tomography, single particle electron microscopy, water balance and water transport in photosynthesizing organisms, *etc*. Second part, "Structure", provides in five chapters the methods for quantitative studies of photosynthetic proteins and their complexes in membranes and reaction centres, their crystallization, structure, kinetics, and dynamics, electron and X-ray crystallography, use as basis for model building, *etc*. Part 3 consists of four chapters devoted to optical spectroscopy. These methods are used in studies of pigment composition, and dynamics of energy and electron transfer; the recent methods are femtosecond time-resolved infrared and nonlinear optical spectroscopy, picosecond spectral evolution of fluorescence, and single molecule techniques for determination of the electronic structure of pigment-protein complexes.

The part entitled "Magnetic resonance" contains six chapters on high-field, high-frequency, and high time-resolution electron paramagnetic resonance and nuclear magnetic resonance, applications of spin labelling, magic angle spinning, and photochemically induced nuclear polarization. The fifth part contains under the title "Theory" five chapters that deal with calculations of electrostatic energy in proteins using various types of models, excitation energy transfer and optical spectra of photosynthetic organisms, methods of molecular dynamic studies of bio-electronic systems, integral methods for studying bacterial photosynthesis, *etc*.

As is usual in this book series, 13 figures in colour are presented on seven plates (pp. CP1–CP7) in addition to their black-and-white printing in the respective chapters. Also the detailed Index is a traditional part of these books.

Books describing methods applicable in the field of photosynthesis are always welcome by students and researchers. Certainly also this new book will be frequently used and often cited.

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