Kraayenhof, R., Visser, A.J.W.G., Gerritsen, H.C., Wolfbeis, O. (ed.): **Fluorescence Spectroscopy, Imaging and Probes.** – Springer Series on Fluorescence. Vol. 2. – Springer-Verlag, Berlin – Heidelberg – New York 2002. ISBN 3-540-42768-6. 390 pp., € 99.95, GBP 70.00, sFr 166.00, USD 109.00 (hardbound).

For more than a century, mechanisms of photosynthesis in plants and in autotrophic bacteria have been studied using fluorescence emission of chlorophyll and of other light-harvesting pigments. This long tradition as well as uniqueness of photosynthetic processes led to a separate development of fluorescence techniques in plant science and in other fields of biology where artificial probes had to be introduced. This partial separation is not anymore valid. Recently, the barriers were broken with the introduction of fluorescent proteins. Parallel development of high-sensitivity imaging detectors, confocal wide-field, confocal laser scanning, and multi-photon excitation microscopy stimulated unprecedented expansion of fluorescence-based techniques in biology including plant science. Development of these techniques driven by inventive scientists and, typically, by small high-tech companies is so rapid that frequent updates must be presented in specialized meetings and, to a broader readership, in specialized book series. Springer publishers offer this Series and this particular volume to disseminate the information on the late developments of fluorescence methodology. Giving an overview of the growing tips of the technique, the book is based on contributions of invited lecturers and other participants of the 7th Conference on Methods and Applications of Fluorescence: Spectroscopy, Imaging and Probes that was held in Amsterdam in September 2001. The book is organized in 4 parts giving four different perspectives of the field. In the Part 1, Fluorescence Spectroscopy: New Approaches and Probes, a broad perspective is provided in 7 chapters. Part 2, Fluorescence Spectroscopy of Single Molecules and Molecular Assemblies (4 chapters) and Part 3, Application of Fluorescence in Biological Membrane and Enzyme Studies are defined by the minute objects below diffraction limit that, with few exceptions, require non-imaging detection. In contrast, Part 4, Microscopic Imaging Techniques and their Application for the Study of Living Cells is reporting on recent advances in imaging of fluorescence emission.

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