

Discussion

Reply to Pettai et al.'s response

Hans-W. Trissl

Universitat Osnabrück, Fachbereich Biologie/Chemie, Abt. Biophysik, Barbarastr. 11, D-49069 Osnabrück, Germany

Received 30 January 2006; accepted 7 February 2006

Available online 20 March 2006

The above answer to my comments still implies the reliability of the absorbance spectra of highly scattering leaves and the deduced quantum yields, quantities which I had questioned. This affects of course the amplitude scaling of our figures. The reply therefore does not meet my points raised.

The absorption spectrum I used is not totally artificial but agrees with a measured BBY-spectrum up to 740 nm and at longer wavelengths it is reconstructed from the Kennard–Stepanov (KS) transformation of the fluorescence spectrum. As a matter of fact the KS relation represents a basic physical

law, provided that thermal equilibration and homogeneous samples are given. If deviations are observed (eventually only minor ones), one or the other or even both conditions are not fulfilled. This may indeed be the case of Chl *a* in solution (involvement of several electronic states), photosystem I (rapid trapping from some pigments before equilibration is completed), isolated reaction centers (fast trapping) or impure preparations. However, the particularly long lifetime of the electronically excited state in photosystem II guarantees thermal equilibration in this large multi-pigment system and therewith the applicability of KS relation.

E-mail address: trissl@uos.de.