

# Apoprotein heterogeneity increases spectral disorder and a step-wise modification of the B850 fluorescence peak position.

Cristian Ilioia<sup>a,b,c,1</sup>, Tjaart P. J. Krüger<sup>c,d</sup>, Oana Ilioia<sup>a,b,2</sup>,

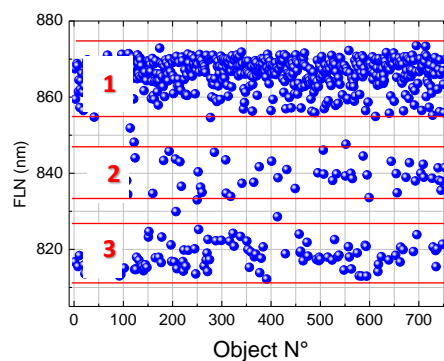
Bruno Robert<sup>a,b,c</sup>, Rienk van Grondelle<sup>c,1</sup> and Andrew Gall<sup>a,b,1</sup>

<sup>a</sup>Institut des sciences du vivant Frédéric Joliot, Commissariat à l’Energie Atomique et aux énergies alternatives (CEA), 91191 Gif-sur-Yvette, France. <sup>b</sup>Institute for Integrative Biology of the Cell (I2BC), CEA, CNRS, Univ. Paris-Sud, Université Paris-Saclay, 91191 Gif-sur-Yvette cedex, France. <sup>c</sup>Department of Physics and Astronomy, Faculty of Sciences, VU University Amsterdam, De Boelelaan 1081 HV Amsterdam, The Netherlands. <sup>d</sup>Department of Physics, University of Pretoria, Hatfield 0028, Pretoria, South Africa.

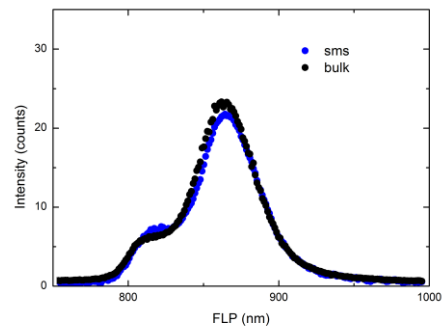
<sup>1</sup>: corresponding author. Cristian.ilioia@cea.fr andrew.gall@cea.fr r.van.grondelle@vu.nl

<sup>2</sup>: current address. UMR 7099 (CNRS - Université Paris Diderot), Institut de Biologie Physico-Chimique, 13 rue Pierre et Marie Curie, 75005 Paris, France.

## Supplementary Material



**Supplementary Figure S1.** Absence of an evolution of the average fluorescence peak position (FLN) of LH2<sub>LL</sub> proteins as a function time (sequential measurement), highlighting the three spectral clusters (1, 2 and 3) which are described in the main body of the text.



**Supplementary Figure S2.** Comparison of the LH2 fluorescence emission spectra originating from the bulk sample (black trace) and the averaged spectrum derived from the fitted LH2<sub>LL</sub> sms measurements (blue traces).