



**Figure 1. ECS spectrum and kinetics in *Chlorella sorokiniana* intact cells, here measured with a Joliot-type spectrophotometer.**

**(A)** Spectrum of absorbance changes ( $\Delta A$ ), peaking at 518 nm, detected 20  $\mu\text{s}$  after a saturating flash.

**(B)** Typical kinetics of ECS, induced by a  $\sim 5$  s continuous red illumination ( $140 \mu\text{mol}_{\text{photons}} \cdot \text{m}^{-2} \cdot \text{s}^{-1}$ , 638nm, white bar). The signal was normalized on the amplitude of the single turnover flash (upward arrow) in the dark **(a)**. Insets show the fast phases of rise and decay in  $\Delta\psi$  at the onset **(b)** and offset **(d)** of light.  $I$  is the initial electron flow rate;  $J$  is the steady-state flow rate. The relative amount of photosystems remaining open during the light,  $PS_o$ , is probed with a saturating flash **(c)**.