Table S1. Definitions of the chlorophyll fluorescence parameters used in the experiments.

Parameter	Definition	Calculation
Φ_{PSII}	Effective quantum yield of PSII photochemistry	(F*m′* − F*s*)/F*m′* [80,88]
Φ_{NPQ}	Quantum yield of regulated non-photochemical energy loss in PSII	F*s*/F*m′* − F*s*/F*m* [128]
Φ_{NO}	Quantum yield of non-regulated energy loss in PSII	F*s*/F*m* [128]
F*v′*/F*m′*	Efficiency of the open PSII reaction centers	(F*m′* – F*o′*)/F*m′* [88]
ETR	Electron transport rate	Φ_{PSII} × PAR × c × abs, where PAR is the photosynthetically active radiation, c is 0.5, and abs is the total light absorption of the leaf taken as 0.84 [129]
q*p*	Photochemical quenching, representing the redox state of quinone A (Q_A), or in other words the fraction of open PSII reaction centers based on the "puddle" model for the photosynthetic unit	(F*m′* − F*s*)/(F*m′* – F*o′*) [88]
NPQ	Non-photochemical quenching reflecting the dissipation of excitation energy as heat	(F*m* – F*m′*)/F*m′* [130]
EXC	Excess excitation energy	(F*v*/F*m* − Φ_{PSII})/F*v*/F*m* [131]
1-qL	The fraction of closed PSII reaction centres based on the "lake" model for the photosynthetic unit	1- (q_p × F_o'/F_s) [80]