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Supplementary Material

The electrical signal-induced systemic photosynthetic response is accompanied by changes in the photochemical reflectance index in pea

Vladimir Sukhov[A,B], *Ekaterina Sukhova*[A], *Ekaterina Gromova*[A], *Lyubov Surova*[A], *Vladimir Nerush*[A] *and Vladimir Vodeneev*[A]

[A]Department of Biophysics, N.I. Lobachevsky State University of Nizhny Novgorod, Nizhny Novgorod, 603950, Russia.

[B]Corresponding author. Email: vssuh@mail.ru

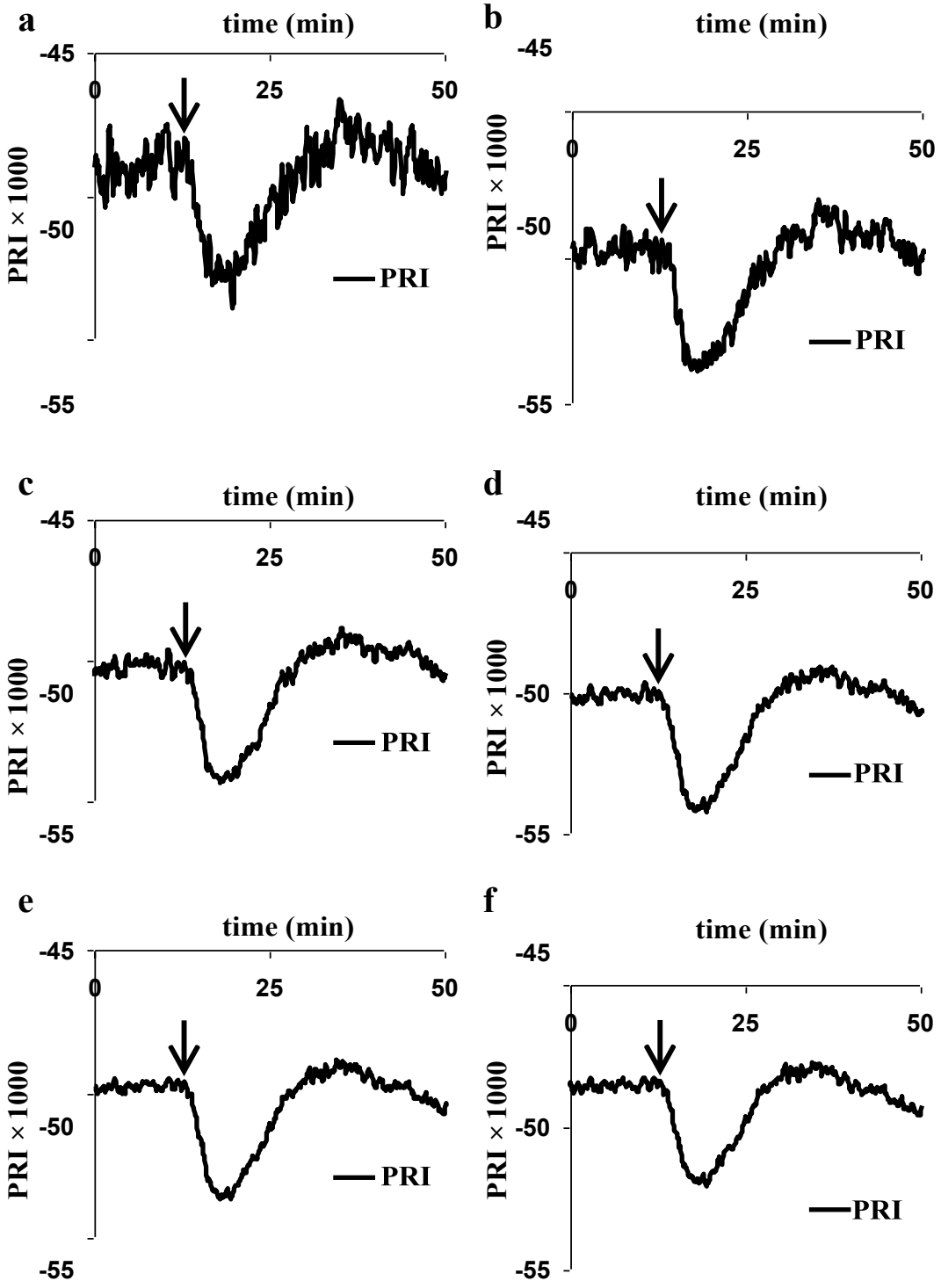

Fig. S1. A typical record of electrical signals-induced change in photochemical reflectance index (PRI), which has been registered in the 2nd leaf. R_{531} and R_{570} were calculated as average intensities of reflected light in ranges from (531-N) nm – to (531+N) nm and from (570-N) nm – to (570+N) nm, respectively. **a**, N was 0 nm; **b**, N was 1 nm; **c**, N was 5 nm; **d**, N was 10 nm; **e**, N was 15 nm; **f**, N was 20 nm. The same response has been shown in all panels of the Figure. The electrical signal was induced by heating of the stipule of the first mature leaf (arrow).

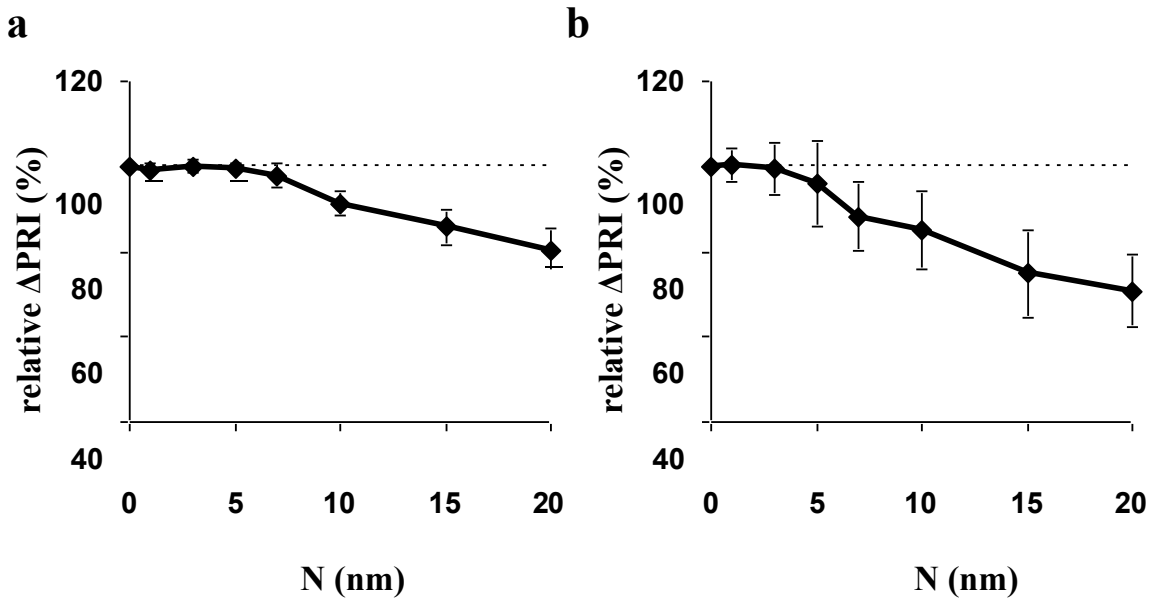

Fig. S2. Averaged magnitudes of electrical signals-induced change in photochemical reflectance index (ΔPRI) in the 2nd (**a**) and 4th (**b**) leaves at different calculation of R_{531} and R_{570} (*n*=5). R_{531} and R_{570} were calculated as average values of reflected light in ranges from (531-N) nm – to (531+N) nm and from (570-N) nm – to (570+N) nm, respectively; N was varied between 0 and 20 nm. ΔPRI which was calculated at N=0 was assumed as 100% (dotted line). The electrical signal was induced by heating of the stipule of the first mature leaf.

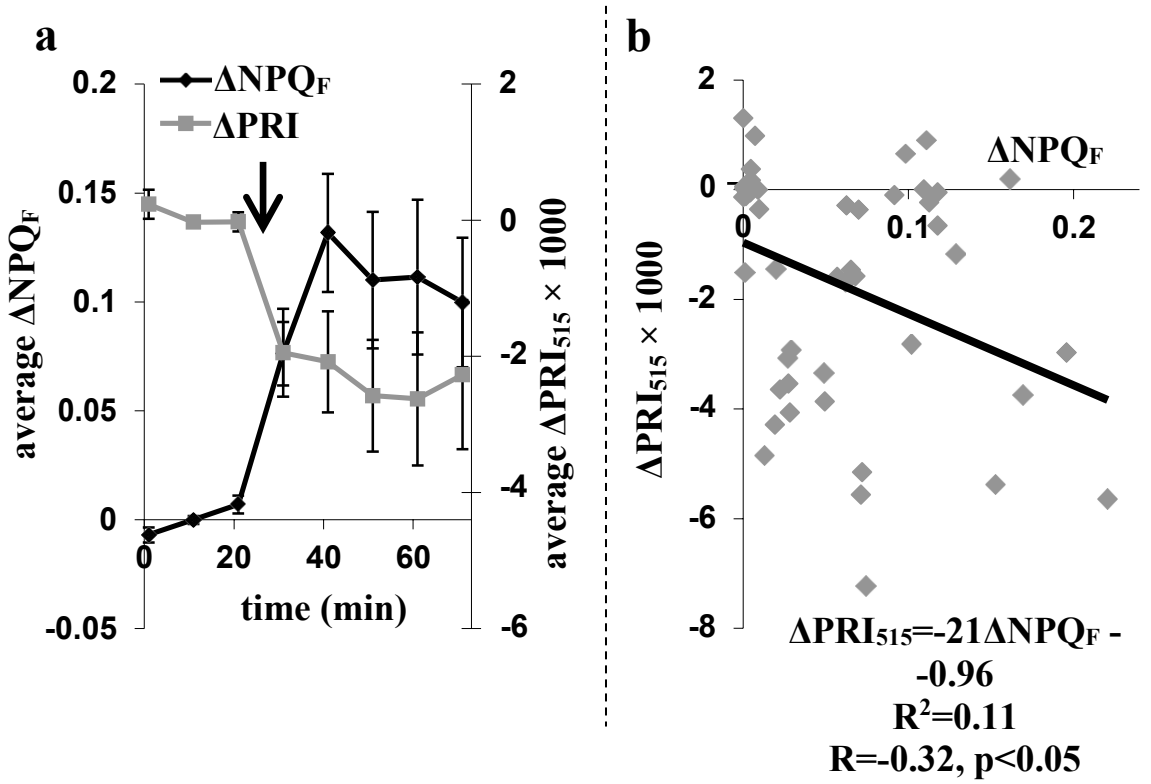

Fig. S3. Dynamics of electrical signals-induced change in the modified photochemical reflectance index (ΔPRI_{515}) and the energy-dependent quenching of fluorescence (ΔNPQ_F) in the 2nd leaf (n=7) (**a**) and a scatter plots between ΔPRI_{515} and ΔNPQ_F (n=56) (**b**). Equation $PRI_{515} = \frac{R_{531} - R_{515}}{R_{531} + R_{515}}$ was used. The electrical signal was induced by heating of the stipule of the first mature leaf (arrow).

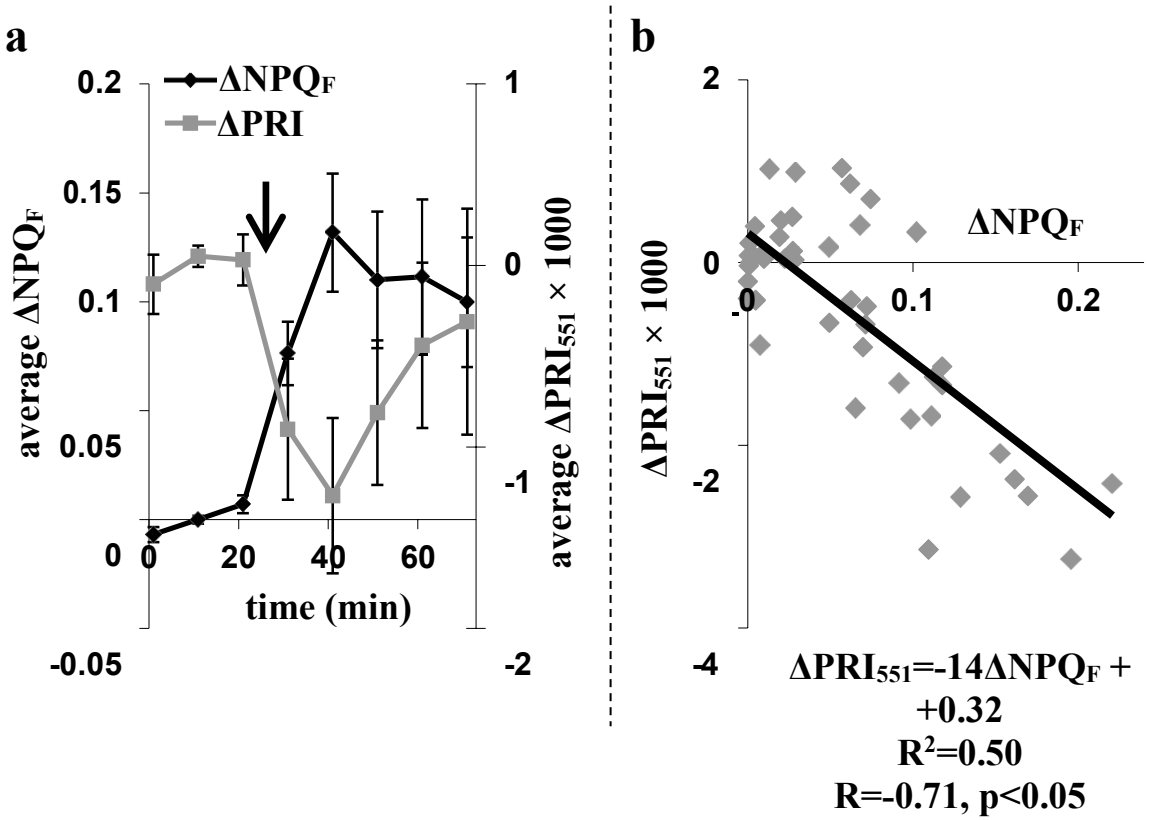

Fig. S4. Dynamics of electrical signals-induced change in the modified photochemical reflectance index (ΔPRI_{551}) and the energy-dependent quenching of fluorescence (ΔNPQ_F) in the 2nd leaf (n=7) (**a**) and a scatter plots between ΔPRI_{551} and ΔNPQ_F (n=56) (**b**). Equation $PRI_{551} = \frac{R_{531} - R_{551}}{R_{531} + R_{551}}$ was used. The electrical signal was induced by heating of the stipule of the first mature leaf (arrow).

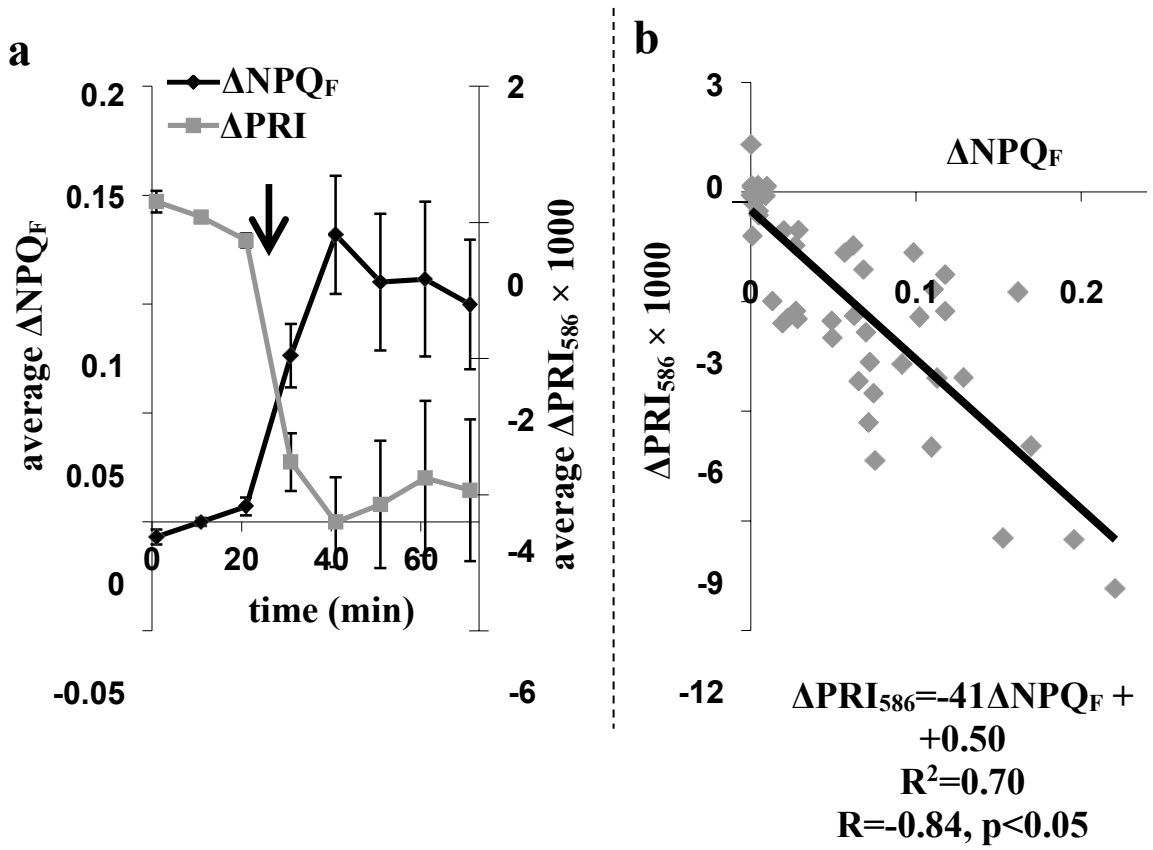

Fig. S5. Dynamics of electrical signals-induced change in the modified photochemical reflectance index (ΔPRI_{586}) and the energy-dependent quenching of fluorescence (ΔNPQ_F) in the 2nd leaf (n=7) (**a**) and a scatter plots between ΔPRI_{586} and ΔNPQ_F (n=56) (**b**). Equation $PRI_{586} = \frac{R_{531} - R_{586}}{R_{531} + R_{586}}$ was used. The electrical signal was induced by heating of the stipule of the first mature leaf (arrow).

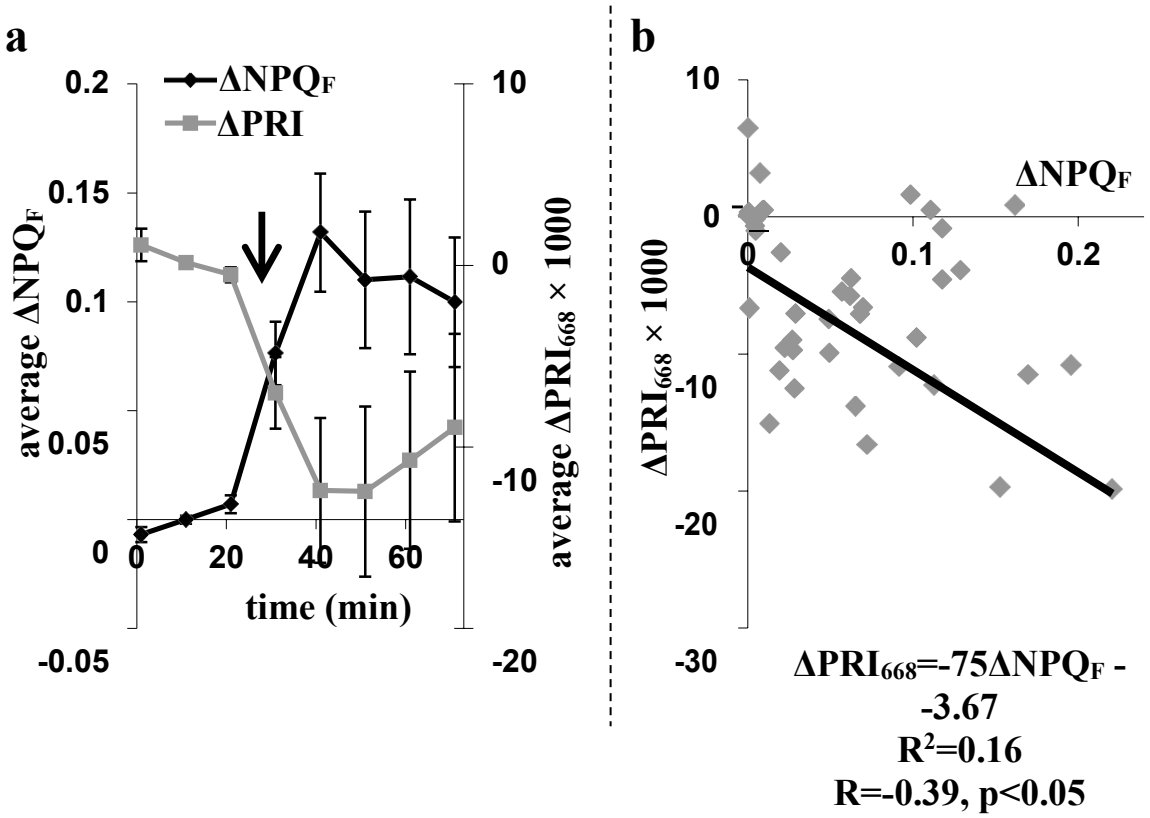

Fig. S6. Dynamics of electrical signals-induced change in the modified photochemical reflectance index (ΔPRI_{668}) and the energy-dependent quenching of fluorescence (ΔNPQ_F) in the 2nd leaf (n=7) (**a**) and a scatter plots between ΔPRI_{668} and ΔNPQ_F (n=56) (**b**). Equation $PRI_{668} = \frac{R_{531} - R_{668}}{R_{531} + R_{668}}$ was used. The electrical signal was induced by heating of the stipule of the first mature leaf (arrow).

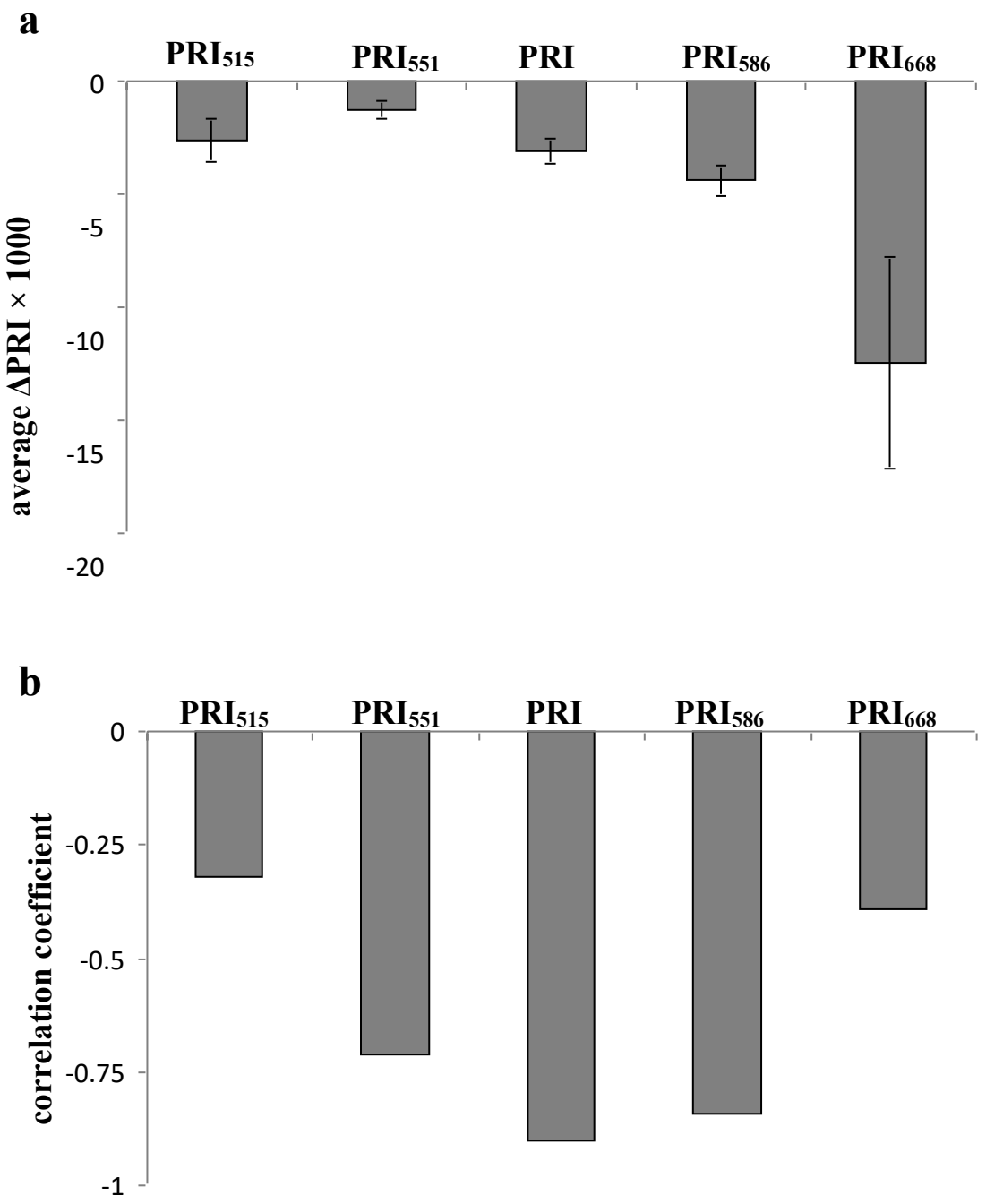

Fig. S7. Average amplitudes electrical signals-induced changes in PRI and modified photochemical reflectance indices (a) and correlation coefficients between PRI and the energy-dependent quenching of fluorescence (b) (n=56). Equations $PRI_{515} = \frac{R_{531} - R_{515}}{R_{531} + R_{515}}$, $PRI_{551} = \frac{R_{531} - R_{551}}{R_{531} + R_{551}}$, $PRI = \frac{R_{531} - R_{570}}{R_{531} + R_{570}}$, $PRI_{586} = \frac{R_{531} - R_{586}}{R_{531} + R_{861}}$ and $PRI_{668} = \frac{R_{531} - R_{668}}{R_{531} + R_{668}}$ were used.

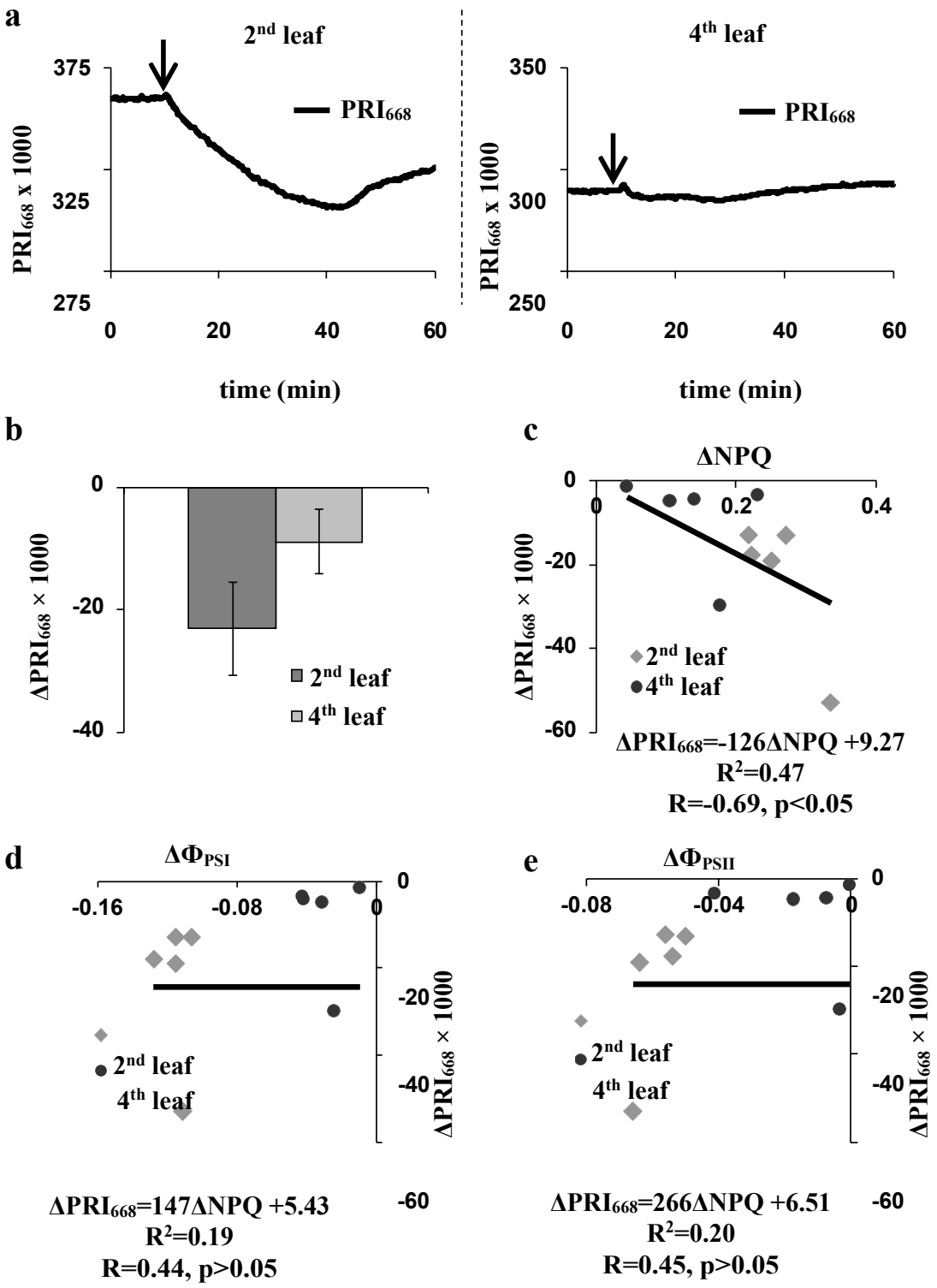

Fig. S8. Electrical signals-induced changes in PRI_{668} in the 2nd and 4th leaves (**a**), average changes (**b**) (n=5) and correlation coefficients of ΔPRI_{668} with ΔNPQ (**c**), $\Delta\Phi_{PSI}$ (**d**) and $\Delta\Phi_{PSII}$ (**e**) (n=10). Equation $PRI_{668} = \frac{R_{531} - R_{668}}{R_{531} + R_{668}}$ was used. The electrical signal was induced by heating of the stipule of the first mature leaf (arrow).