Supplementary Information

Plasmon Resonance Energy Transfer and Plexcitonic Solar Cell

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**Figure S1.** Extinction spectra of the reference sample of Au@RB hybrid, which does not exhibit Fano resonance. The extinction intensity of RB is set to be comparable with that of Chl.

**Figure S2.** $I-V$ curves of the reference samples of Au@RB-SSCs.
**Figure S3.** Schematic of the Pump-Probe experimental setup. M = mirror, L = lens, D = detector, S = sample.

**Figure S4.** The normalized Fano shape of Au@Chl hybrids with varied SPR (a) and varied μ_dye (b). The normalized Fano shape (σ_{dye@Au}(ν)/σ_{Au}(ν)) of each Au@Chl absorption spectrum is fitted by the function (red lines) $f(ν) = \left\{ (1 - a_F) + a_F \frac{[h(ν - ν_o) + qγ]^2}{[h(ν - ν_o)]^2 + γ^2} \right\}$, from which we extract the $q$ and $a_F$ parameters.