

Support Information

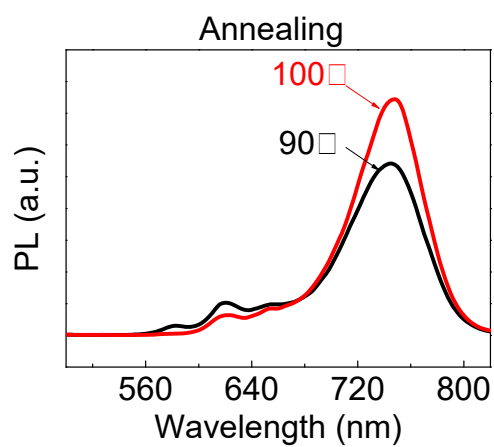


Figure S1. Steady state photoluminescence spectra of perovskite films from front sides at different preheating temperatures.

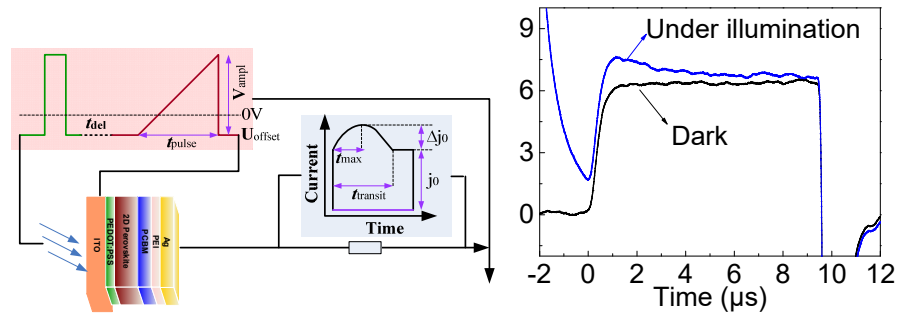


Figure S2. Schematic diagram of the CELIV test of perovskite solar cell.