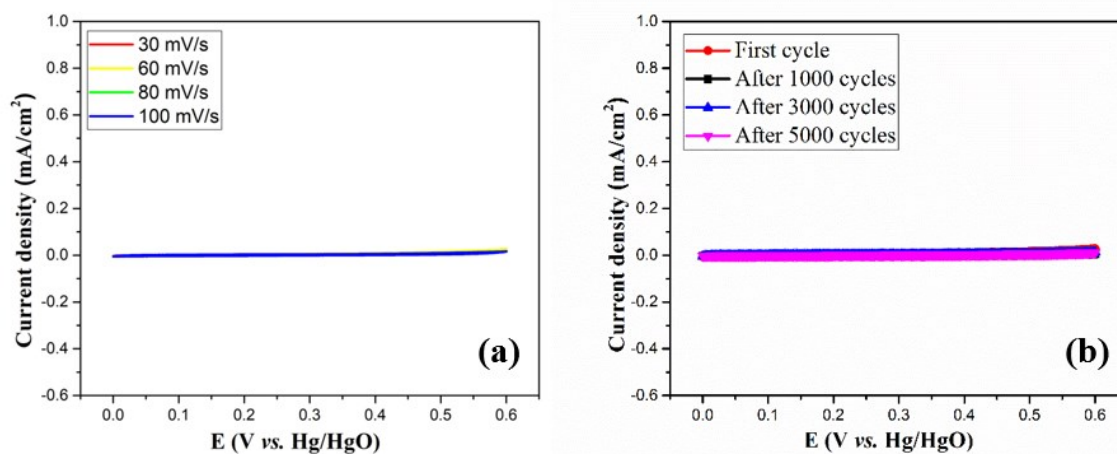


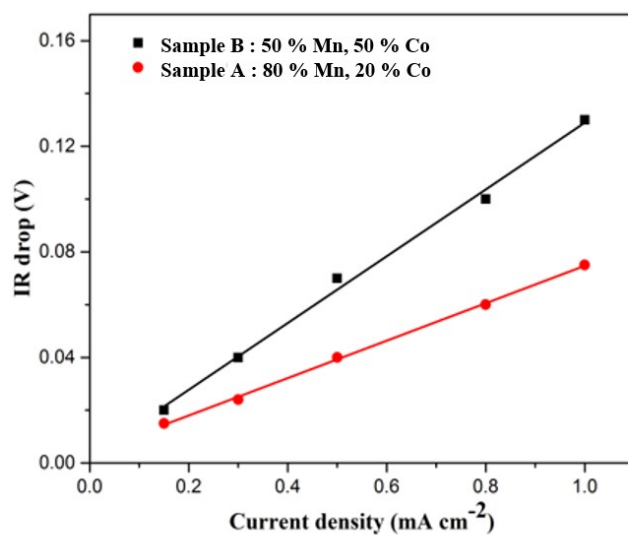
## Electronic Supplementary Information

Voltage (V)	Envelope width ( $\mu\text{s}$ )	$\mu\text{pulses}$	Fire rate (Hz)	Pulse fluence ( $\text{J}/\text{cm}^2$ )	No. of pulses
670	1950	8	1.2	5.6	3

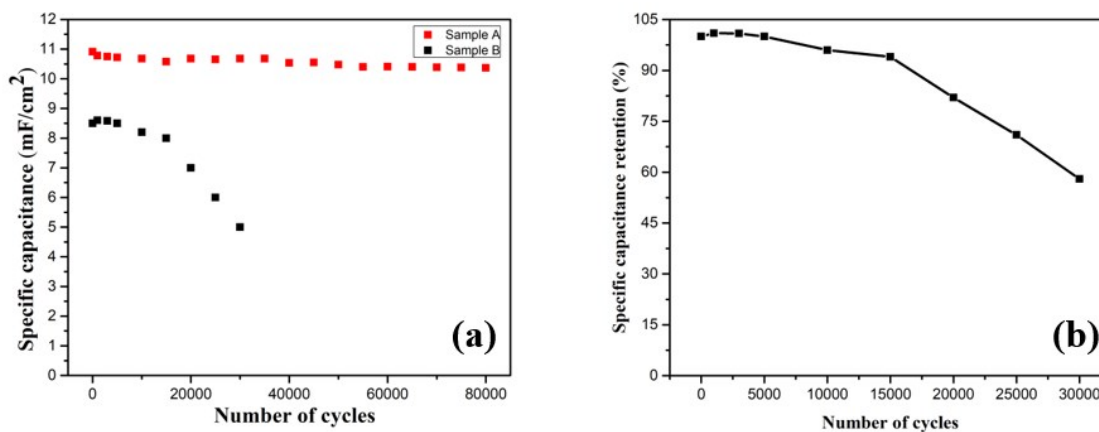
**Table S1.** Thin film processing parameters.



**Figure S1.** CV curves for Pt-Si substrate (a) at various scan rates and (b) at 50 mV/s scan rate after various number of CV cycles.



**Figure S2.** IR drops at various current densities for both the samples.



**Figure S3.** (a) Specific capacitance vs. number of GCD cycles for Samples A and B and (b) Specific capacitance retention percentage vs. number of GCD cycles for Sample B.