

### Supplementary information

## Facile synthesis of hetrostructured lanthanum doped SnO<sub>2</sub> anchored with rGO for asymmetric supercapacitor and photocatalytic dye degradation

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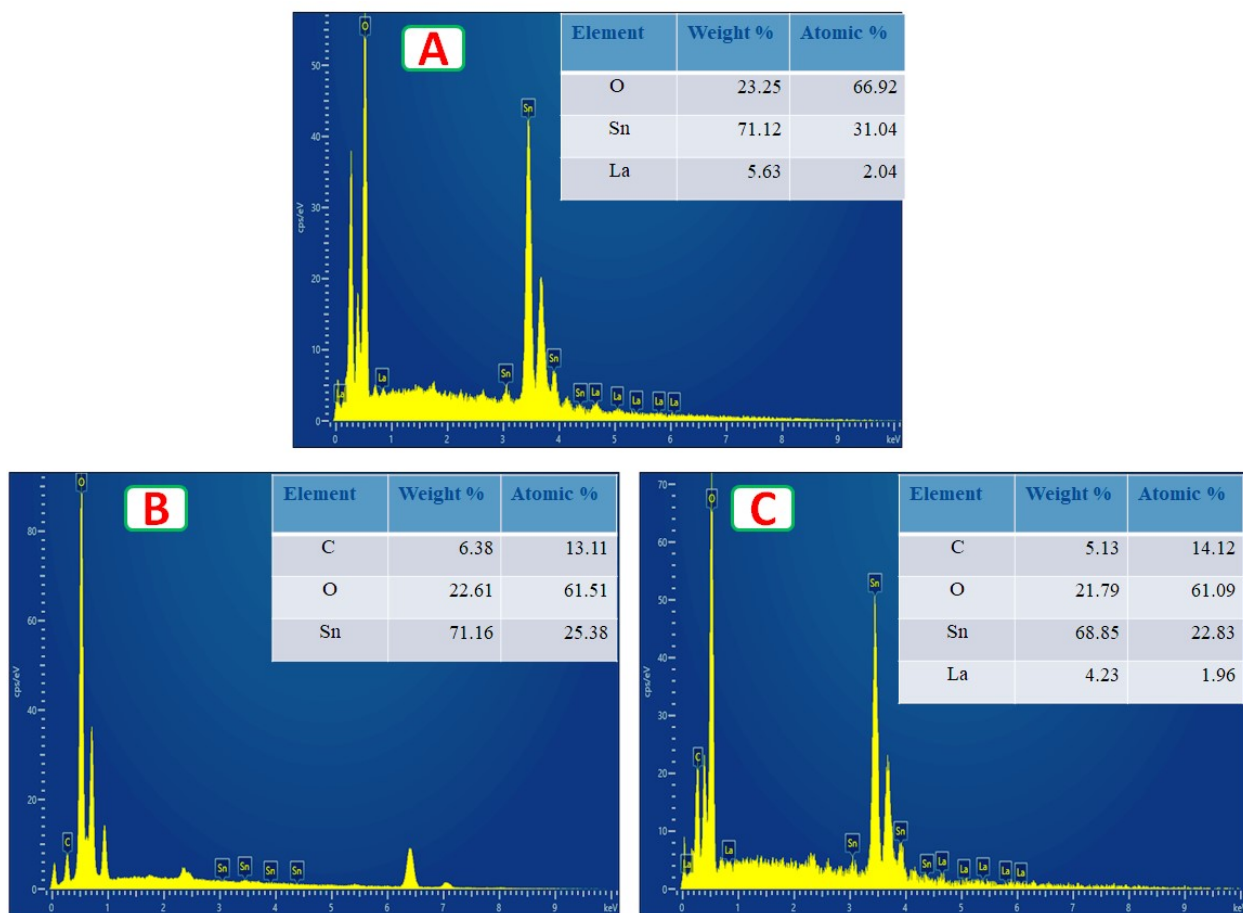
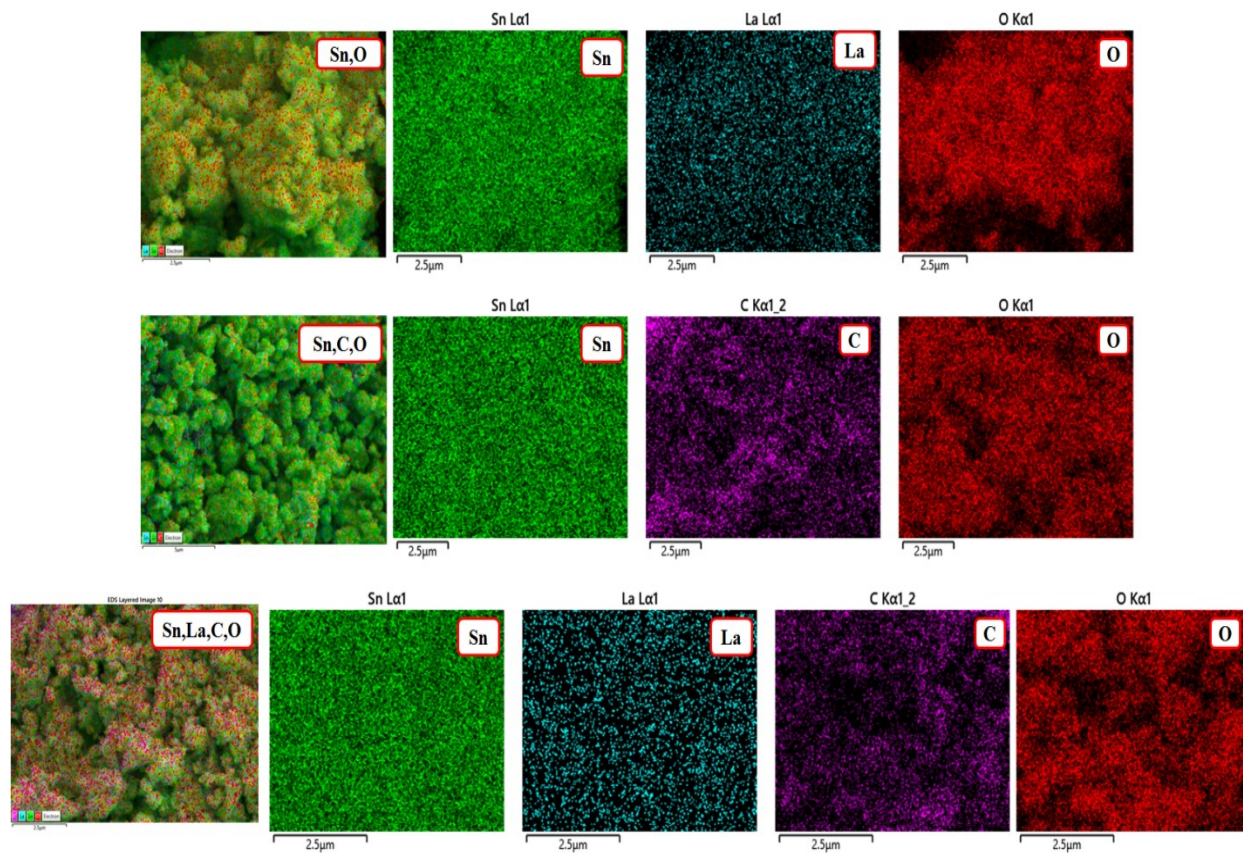
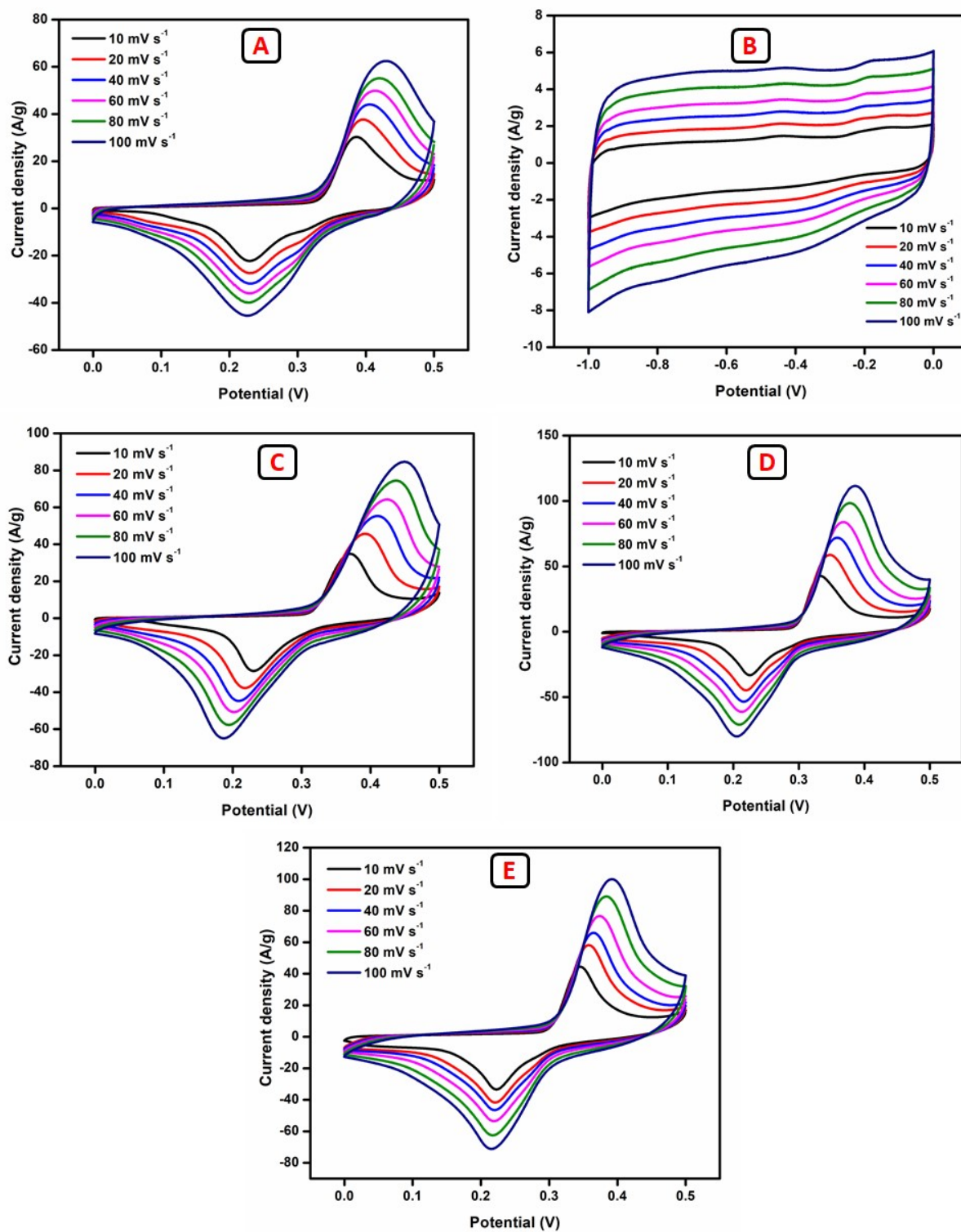


Figure S1 EDSspectra of (A) La-SnO<sub>2</sub>, (B) SnO<sub>2</sub>@rGO and (C) La-SnO<sub>2</sub>@rGO samples.



**Figure S2.**Element mapping analysis of the La-SnO<sub>2</sub> (1<sup>st</sup> row), SnO<sub>2</sub>@rGO (2<sup>nd</sup> row) and La-SnO<sub>2</sub>@rGO (3<sup>rd</sup> row) samples.



**Figure S3** CV curve of (A) SnO<sub>2</sub>, (B) rGO, (C) La-SnO<sub>2</sub>, (D) SnO<sub>2</sub>@rGO and (E) La-SnO<sub>2</sub>@rGO electrodes with different scan rates (10-100 mV s<sup>-1</sup>).

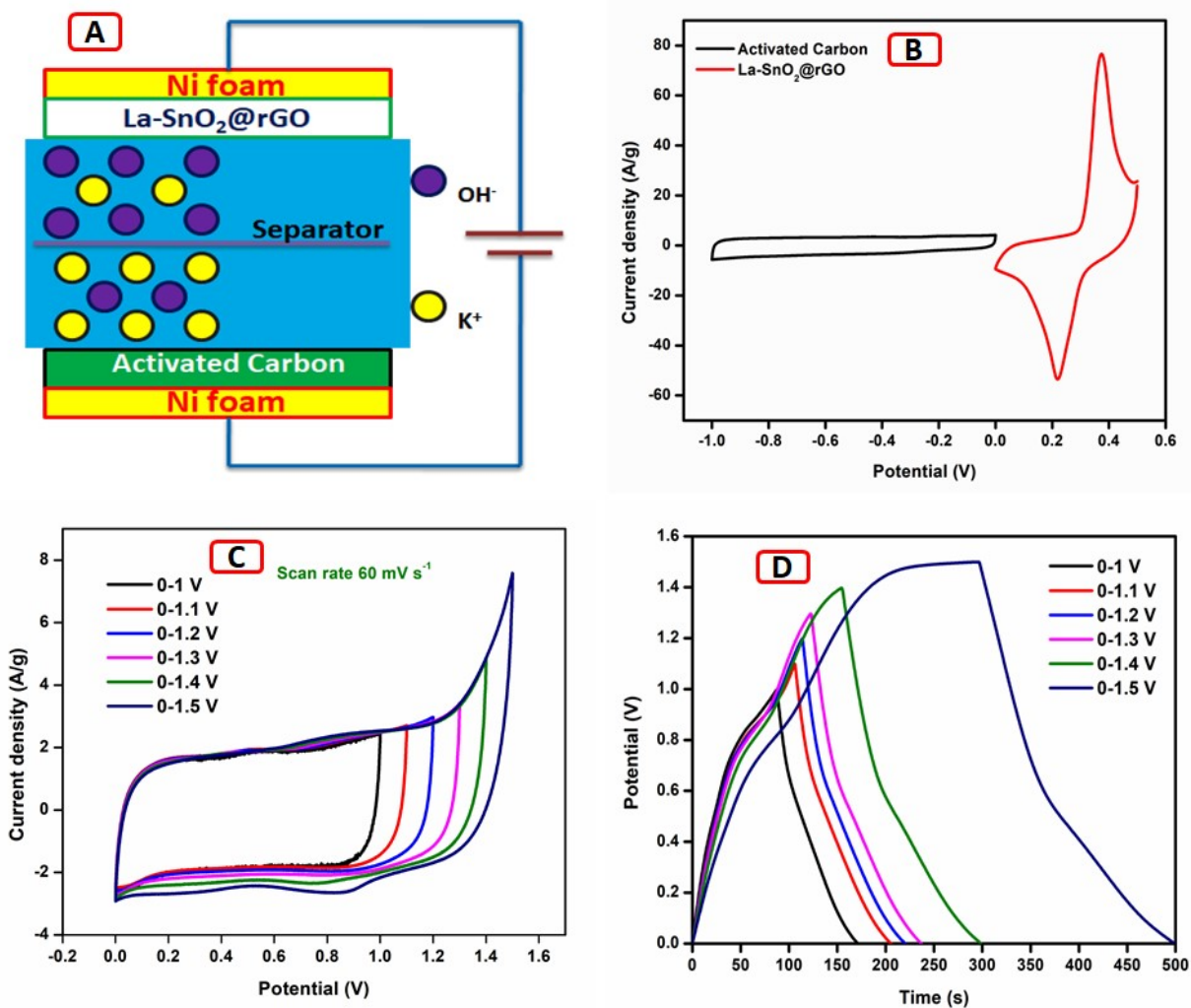


Figure S4 (A) Schematic diagram of La-SnO<sub>2</sub>@rGO//AC device, B) CV curves of AC and La-SnO<sub>2</sub>@rGO electrodes using a three electrode setup, C) CV curves of the device with varying potential range (0-1.5V) at a scan rates of 60 mV/s, D) GCD curves of the device varying potential ranges at current density of 1 A/g.