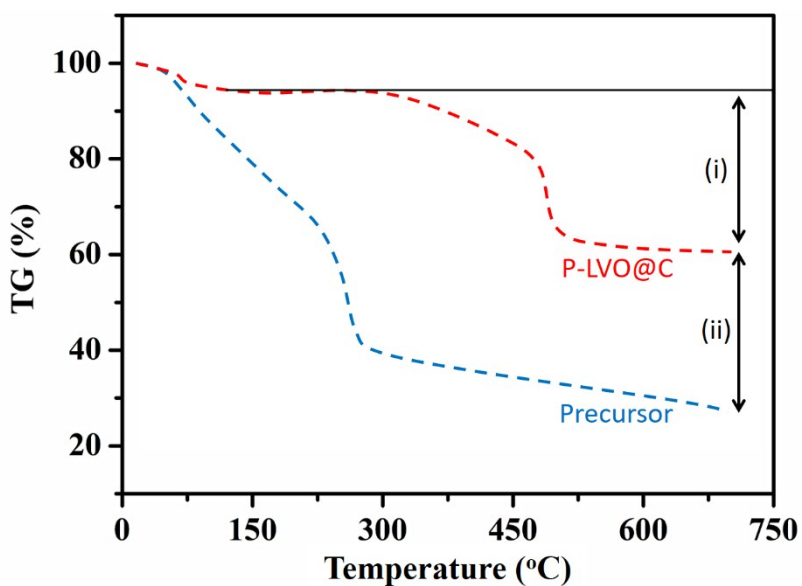
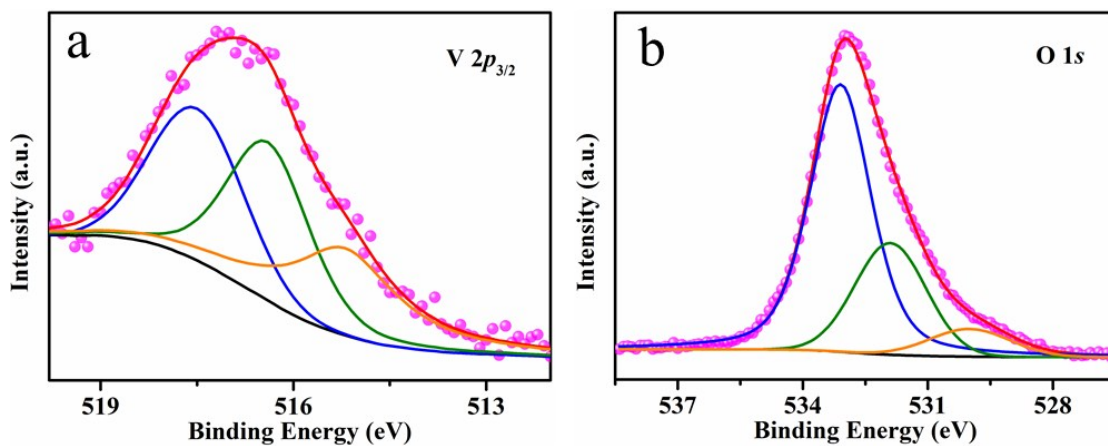


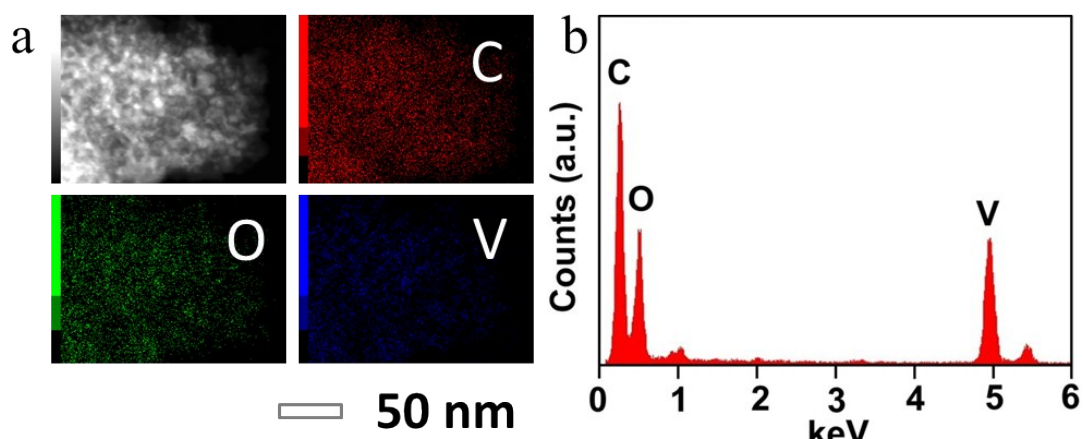
**Figure S1.** Wide angle XRD pattern of the material after calcination under  $\text{N}_2$ , without adding citric acid in the reaction medium.



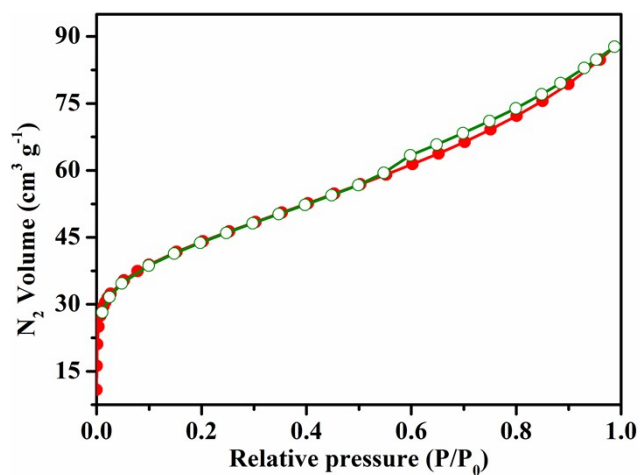
**Figure S2** TG curves for precursor and P-LVO@C under oxygen flow.



**Figure S3.** XPS spectra of P-LVO@C: (a) V  $2p_{3/2}$  and (b) O  $1s$ .



**Figure S4.** Elemental mapping (a) with EDX spectrum (b) of P-LVO@C.



**Figure S5.**  $N_2$  adsorption-desorption isotherms of P-LVO@C.