## Supplementary Information

## Facile synthesis of Pd nanostructures with enhanced electrocatalytic performance for ethanol oxidation by a bio-

## based method

Guigui Pang, Muxue Sun, Peng Liu, Li Hou, Faming Gao\*

Key Laboratory of Applied Chemistry, Department of Applied Chemistry, Yanshan University, Qinhuangdao 066004, P. R. China.

\* Corresponding Author E-mail: fmgao@ysu.edu.cn. Phone: 86 335 8387552. Fax: 86 335 8061569



**Figure S1.** TEM images for time-dependent morphology evolution of the Pd nanowire networks at(a) 0 min(before adding NaBH<sub>4</sub>), (b)1min(after adding NaBH<sub>4</sub>), (c)5 min and (d)10min. All the scale bars present 50 nm.



**Figure S2.** TEM images for time-dependent morphology evolution of the Pd nanoparticles at(a) 0 min(before adding NaBH<sub>4</sub>), (b)1min(after adding



NaBH<sub>4</sub>), (c)5 min and (d)10min. All the scale bars present 50 nm.

Fifure S3. C1s spectra of PdNWs(a), PdNW/MWCNT(b) and PdNW/CB



**Figure S4.** The comparison of the electrochemical performance of carbon-supported materials: CVs obtained in  $N_2$ -purged 0.5 M H<sub>2</sub>SO<sub>4</sub> (a) specific activity of PdNWs, PdNW/MWCNT and PdNW/CB (b) and specific activity of PdNPs, PdNP/MWCNT and PdNP/CB.