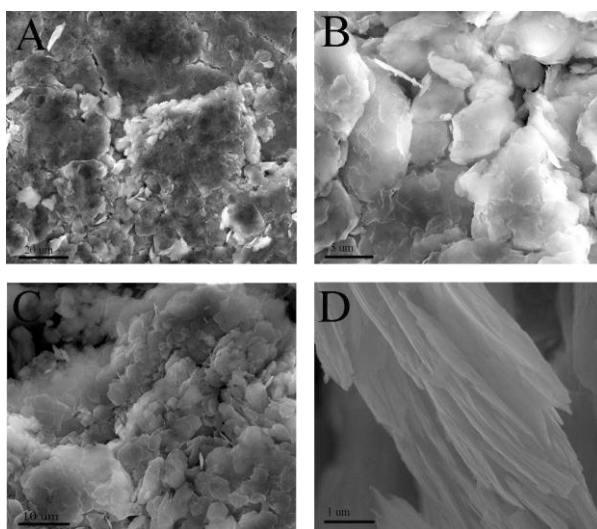
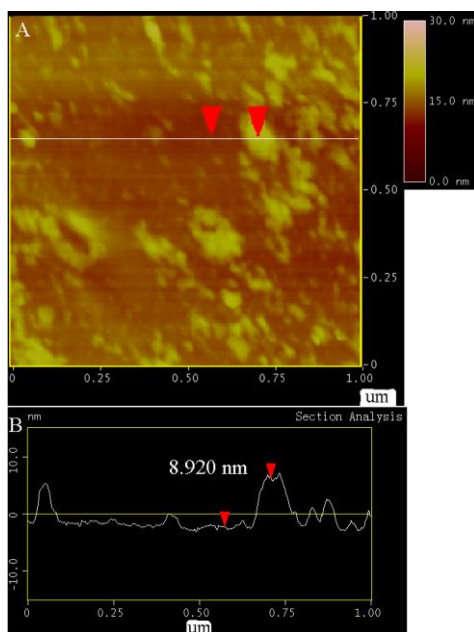


## Supporting Information



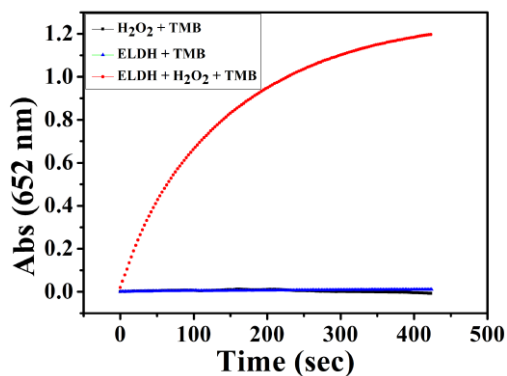
**Figure S1** SEM images of Co-Al-Cl LDH (A, B), and Co-Al-NO<sub>3</sub> LDH (C, D) samples acquired after treating CO<sub>3</sub>-form with HCl-NaCl mixed solution and ion-exchange by NaNO<sub>3</sub> solution.



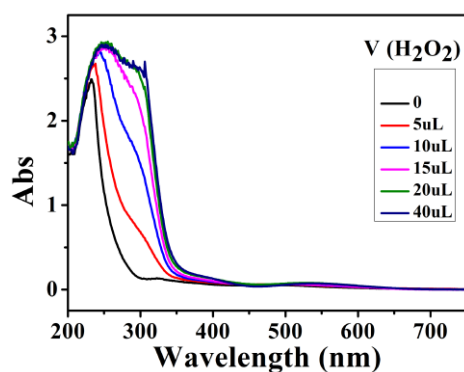
**Figure S2** (A) Typical AFM image of Co-Al ELDH nanosheets in tapping mode. (B) The line shows the height profile of Co-Al ELDH.



**Figure S3** Tyndall effect of Co-Al ELDH colloidal suspension.



**Figure S4** The time-dependent absorbance changes at 652 nm of 400  $\mu\text{L}$  of 800  $\mu\text{M}$  TMB reaction solutions (pH 6.0 at room temperature): (1) 10 mM  $\text{H}_2\text{O}_2$  and 800  $\mu\text{M}$  TMB; (2) 350  $\mu\text{L}\cdot\text{mL}^{-1}$  Co-Al ELDH and 800  $\mu\text{M}$  TMB; (3) 350  $\mu\text{L}\cdot\text{mL}^{-1}$  Co-Al ELDH, 10 mM  $\text{H}_2\text{O}_2$  and 800  $\mu\text{M}$  TMB.



**Figure S5** The difference spectra between the absorption spectra of Co-Al ELDH/ $\text{H}_2\text{O}_2$  and  $\text{H}_2\text{O}_2$ . Assay were performed by titration of 400  $\mu\text{L}$  of 350  $\mu\text{L}\cdot\text{mL}^{-1}$  Co-Al ELDH with 800  $\mu\text{M}$  TMB in 25 mM PBS (pH 6.0 at room temperature).

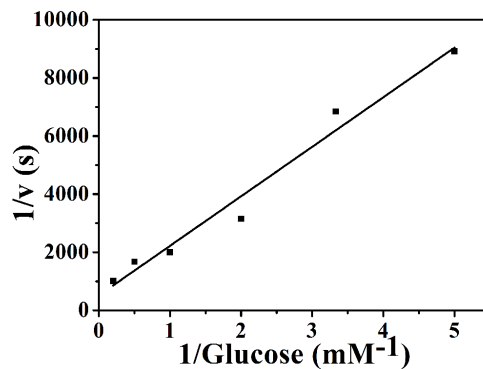


Figure S6 Double reciprocal plot of activity of GOx for the substrate of glucose.

**Table S1** The Michaelis-Menten constant ( $K_m$ ) and maximum reaction rate ( $V_{max}$ ) of Co-Al ELDH.

Catalyst	Substrate	$K_m$ [mM]	$V_{max}$ [ $\text{s}^{-1}$ ]
Co-Al ELDH	TMB	0.372	0.101
Co-Al ELDH	$\text{H}_2\text{O}_2$	22.13	0.598
GOx	Glucose	3.24	0.0019