Supplementary material

for

CoAl-LDHs@Fe₃O₄ decorated by Cobalt Nanowires and Cobalt Nanoparticles in Heterogeneous Electro-Fenton process to Degrade 1-hydroxyethane 1,1-diphosphonic acid and Glyphosate

Kexin Zhou¹, Xing-peng Liu², Hongyun Guo¹, Hui-qiang Li^{1,*}, Ping Yang

¹ College of Architecture and Environment, Sichuan University, Chengdu 610065, China.

² College of Communication Engineering, Chengdu Technological University, Chengdu 611730, China

E-mail: <u>zhoukexin99@126.com</u>, <u>lxp_herb@163.com</u>, <u>1343906011@qq.com</u>, <u>lhq_scu@163.com</u>, <u>yping63@163.com</u>

Tel. +8613018291476, +8618980669653, +8613767013475, +8618980668020, +8618602804508

* Author to whom correspondence should be addressed; E-mail: <u>lhq_scu@163.com</u>

Tel. +8618980668020

Figures: 5 Tables: 1 Pages: 7 (including the cover page)



Fig. S1. (a): the SEM image (with higher magnification) of CoNPs; (b): the SEM image (with lower magnification) of CoNWs .



Fig. S2. The structures of HEDP (a) and PMG(b).



Fig. S3. The concentration of H_2O_2 by different catalysts.



Fig. S4. The concentration of \cdot OH by different catalysts.



Fig. S5. The concentration of Fe $^{2+}$ / Fe $^{3+}$ by different catalysts.

Table. S1. Specific BET surface area, pore volume and average pore diameter of the

Sample	surface area (m^2/g)	pore volume (cm ³ /g)	pore diameter (nm)
CoNWs@CoAl- LDHs/Fe ₃ O ₄	44.6639	0.1412	12.5191
CoNPs@CoAl- LDHs/Fe ₃ O ₄	35.5203	0.0768	7.9800

 $CoNWs @CoAl-LDHs/Fe_{3}O_{4} \ and \ CoNPs @CoAl-LDHs/Fe_{3}O_{4} \ samples.$